DOMESTIC ENGINEERING

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## NATIONAL MOVEMENT IS LAUNCHED TO CONSERVE BUILDING INDUSTRY.

PROBABLY the most notable event, which has transpired in the building industry for many years, was the recent consolidation of the representative and organized units of the construction interests, which sent delegates to the convention called by the Chamber of Commerce of the United States at Atlantic City.

The National Federation of Building Industries is the official name of the new organization which has come into existence as a conservation measure during the war.

The organized branches of the plumbing and heating industry appreciate the formation of an organization of this broad character, in view of the growing necessity of better sanitary facilities and improved heating systems for fuel conservation in many of the congested manufacturing centers.

Among other suggestions calculated to assist the Government in accelerating production in war activity, the new organization will also no doubt present statistics relative to the need of granting concessions to the plumbing and heating trades, in deliveries and material, in order that the health, comfort and efficiency of the workers in the war industries may be assured.

It is fortunate that this consolidation has been effected, considering the disintegrated condition of building construction throughout the country, and the importance of continuing essential building operations.

The birth of the Federation was largely the outgrowth of suggestions emanating from the War Industries Board. This body saw the advantage of dealing directly with an entire industry, rather than with various units, in questions of war-time policy. The board indicated the need of representative war service committees to assist in determining essential and non-essential building operations.

In conformity with Governmental desire along this line, the Chamber of Commerce of the United States assumed the offensive in getting together the different units of the building industry and in encouraging the formation of one great organized unit, whose primary aims are to be dedicated to co-operation in the win-the-war program.

Representative men of the plumbing and heating industry were present at the convention. They manifested keen interest in the addresses and discussions—all directed toward placing the building trades on a higher plane of usefulness during the period of the war.

This organization, with its larger scope of effectiveness, will be able to speak with collective authority and render greater service to the Government than hitherto in the problems, which are confronting the building trades.

Building trade relations with the Government will be more mutual than before and essentially co-operative and advisory.

All branches of the building crafts are not only desirous of co-operating in the victory push against the Hunnish Menace, but also anxious to secure effective governmental assistance in the effort to preserve as far as possible the equilibrium of their industry.

In this connection the Washington authorities will doubtless consider the collective voice of the building industry, as it has been stated that there is no desire to kill building operations of an essential nature.

This point was emphasized by Louis F. Post, Assistant Secretary of Labor, when he said at the convention: "We must have food, we must have clothing, and building goes along with the rest. We might as well be without buildings as without clothing, and almost as well without both as without food. We must have buildings. Buildings constitute one of the absolute needs of civilization, not necessarily buildings with thirty bedrooms for a family of two or three people, but decent, reasonable houses.

"You have got to be prepared, gentlemen, and, forming a new organization, you can easily prepare yourselves, more so than those in the older organizations, for an absolutely new world when this war is over."

# HEATING *and* VENTILATING SMALL AUDIENCE HALLS

*Notes on the Installation of Suitable Heating and Ventilating Systems in Lodge Halls, Lecture Rooms and Moving Picture Theatres*

*By* Charles L. Hubbard

THIS article relates especially to the heating and ventilation of small audience halls, such as are found in country villages and large towns, rather than to city buildings of large size. Rooms of this kind are used for lodge and grange meetings, lectures, moving pictures, etc., and come under the charge of the average fitter from time to time in connection with other work.

In order to give satisfactory results considerable skill and judgment is required in laying out and installing work of this kind.

Halls of this general type are of two kinds, those occupying entire buildings or the upper parts of buildings used for other purposes on the first floor, and those surrounded entirely, or almost entirely, by other rooms, as in the case of moving picture halls and theatres in large towns.

In the first case the comparatively large amount of outside wall exposure makes the heating an important factor in the problem, while with interior rooms it is one almost entirely of ventilation.

In both cases heating and ventilation must be considered in connection with one another and treated as a single problem.

First, let us take up the case, where an entire building is devoted to the hall and its ante-rooms, or where the first floor is occupied by stores, in which case the conditions to be met are practically the same. Generally, halls of this kind are used more or less intermittently, so that the heating and ventilating systems must be separated to such an extent that heat may be supplied at any time without ventilation, such as for quick warming of the room for an audience, or for a small committee meeting, when an outside air supply is not required, or for cleaning, etc. In other cases the room may be in use every evening, and it will be more economical in the use of fuel to keep the temperature fairly uniform and supply fresh air only as needed during the evenings or other periods of occupancy.

For halls of comparatively small size, especially if on the first floor of the building, a hot-air system, consisting of one or more furnaces, makes an especially good arrangement in many ways. It is inexpensive to install, as compared with steam or water, has nothing to freeze when used intermittently, and may be made to give either heat or ventilation or a combination of the two by a proper arrangement of ducts and switch dampers so placed as to take the air supply either from the outside or to return it from the building when only heat is required.

In cases where it seems more desirable to use steam it will be necessary to install sufficient indirect surface to heat the air for ventilation regardless of the system of heating employed. The latter may consist entirely of direct radiation independent of the ventilating system, or the two may be combined by increasing the surface in the indirect stacks and providing both mixing and switch dampers so that temperature and outside air supply may be controlled at will. While hot-water heat is sometimes used in this class of work there seems to be practically no advantage to be gained and at the same time it introduces the element of freezing, when the system is used intermittently. This is an important objection in cold localities and serves to set aside hot water in some cases. The chief advantage of hot-water heat is that of temperature control and this is not of great importance as compared with steam in work of this class. When direct surface is used for heating it is usually distributed in a considerable number of radiators so that only the required number need be used at any time to produce the desired amount of heat.

If the one-pipe system is employed it will be a simple matter for the janitor to adjust the heating surface to the outside temperature and the size of the audience. When all of the surface is placed in the indirect stacks the temperature is easily controlled by means of the mixing dampers.

**Computing Heat Loss.**

The first step, regardless of the form of heating system to be used, is to compute the heat loss from the building. There are a number of good rules for doing this, among which the following has been found to give good results for buildings of ordinary wooden construction or those with brick walls of average thickness.

This expressed as a formula (1) is: $H=[(W\times 20)+(G\times 85)+(C\times 10)]\times E$, in which

H=the total heat units lost per hour.

W=square feet of outside wall surface.

G=square feet of glass surface.

C=square feet of ceiling, when there is a cold attic or space above.

E=a factor for exposure, which may be taken as follows:

1.5 for a building standing alone in an exposed location.

1.4 for a building standing alone in a fairly sheltered location.

1.3 for a room having two outside walls, in a building used for other purposes.

1.2 for rooms like the above, with only one exposed wall.

The use of this will be made clear by applying it to a practical example:

A hall in a separate building in an exposed location has 4,000 square feet of wall surface, 800 of glass and 4,500 of cold ceiling. What will be the total heat loss per hour to be made up by the heating system?

Substituting in the formula we have $H=[(4,000\times 20)+$

$(800\times85)+(4,500\times10)]\times1.5=$ $(80,000+68,000+45,000)\times1.5$ $=193,000\times1.5=289,500$ B.t.u.

This is simply for heating purposes, and the heat required for ventilation must be added to it to get the total amount necessary. This is based on the maximum number of occupants to be supplied and may be taken as 1,000 to 1,200 cubic feet per hour, each. The approximate quantity of heat required to raise the temperature of 1 cubic foot of air from zero to 70 degrees, the nominal inside temperature, is 1.3 B.t.u. Hence, the heat required for ventilating purposes will be found by the aid of formula 2:

$V=N\times1,200\times1.3$, in which

V=heat required for ventilation per hour.

N=Number of occupants.

In the above case, if the hall seats 300 people, the heat necessary for ventilating purposes in zero weather will be $V=300\times1,200\times1.3=468,000$ B.t.u., which is about 1.7 times that required for heating alone. This makes a total of

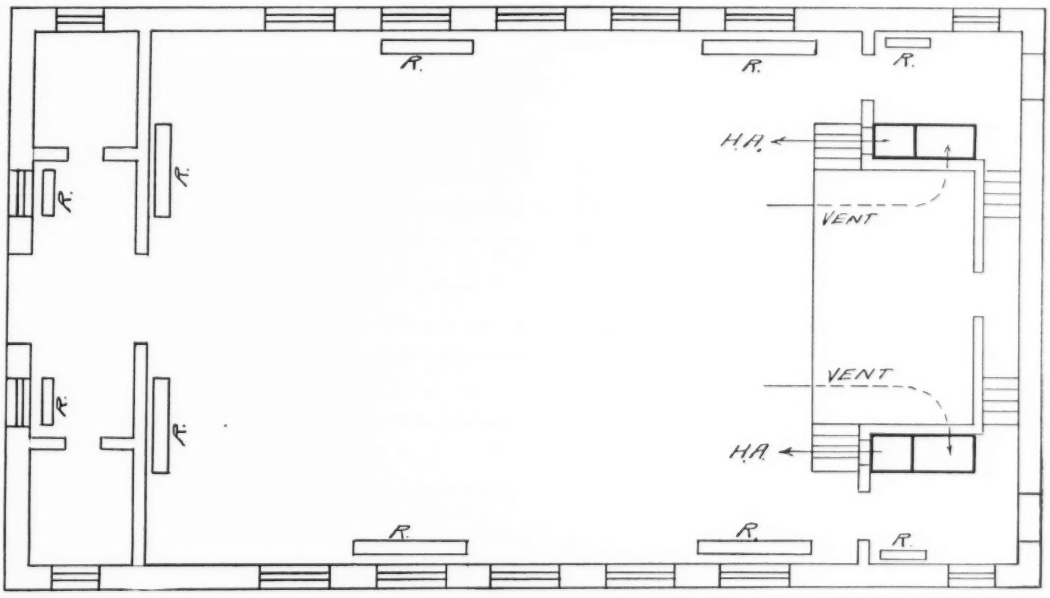



Fig. 1.

289,500+468,000=757,500 B.t.u. per hour for both heat and ventilation.

In the average case it will be possible to reduce the quantity for ventilating purposes somewhat, as in zero weather the outside air volume may be cut down temporarily and a portion of the inside air recirculated. Hence, if 60 to 70 per cent of the maximum is provided, it will be sufficient in most cases, and give the full volume of outside air during a greater part of the heating season. Theoretically, an interior room, having no outside exposure, requires no heat at all, but actually this is not so. A room of this kind will become damp and chilly, if unoccupied, and a hall of this description must be provided with a certain amount of heating surface for putting it in condition for occupancy, although it may be necessary to shut off all heat afterwards.

Estimating heat loss in cases of this kind requires considerable experience, but, if based on 5 B.t.u. per square foot of wall and ceiling space, the result will not be far out of the way. When it is necessary to determine the air supply, and the number of occupants is not known, allow 1 occupant for each 15 square feet of floor space; that is, divide the total floor space in square feet, including platform, by 15 and the result will be the approximate number of occupants.

Having determined the heat requirements for both heating and ventilating purposes, the next step is to compute the radiating surface. When the room is to be heated independently of the ventilating system, by direct surface, we may divide the total heat loss per hour by 250 for sectional cast-iron radiators and by 280 for pipe coils along the walls.

The air for ventilating purposes in the average case is warmed by indirect gravity stacks, which, with the air heated from zero to 70 degrees, will have an efficiency of about 410 B.t.u per square foot of surface per hour. This is based on steam at 2 pounds gauge pressure and an air velocity through the heater of 300 feet per minute. In the example previously given $289,500\div250=1,160$ square feet of direct cast-iron radiation would be required for heating, and $468,000\div410=1,140$ square feet of indirect surface for full ventilation in zero weather, taking 60 per cent of this for average conditions, would call for $1,140\times0.6=684$ square feet. When both heating and ventilation are to be done from combined indirect stacks, the method of computation is somewhat different. Here we first find the required temperature of the ventilating air for heating the building. This is given by the formula 3:

$$T=\frac{H\times55}{C}+70, \text{ in which}$$

T=temperature of air delivered to room.

H=heat loss by transmission and leakage as found by formula (1).

C=cubic feet of air to be supplied per hour for ventilation.

Having determined the final temperature of the air entering the room (T), the total heat required to raise the air supply (C) to this temperature is found by formula 4:

$$G=\frac{T\times C}{55}, \text{ in which}$$

G=total heat required per hour for both heating and ventilating.

T=temperature of entering air.

C=cubic feet of air admitted, per hour.

Applying this to the same problem as before, we have:

$$T = \frac{289{,}500 \times 55}{300 \times 1{,}200} + 70 = 114 \text{ degrees}$$

and $$G = \frac{114 \times (300 \times 1{,}200)}{55} = 750{,}000 \text{ B.t.u.}$$

in round numbers.

The temperature of steam at 2 pounds gauge pressure is 220 degrees (nearly), and the average temperature of air entering the heater at zero and leaving at 114 degrees is $\frac{114}{2} = 57$ degrees, giving a difference between the heating surface and average air temperature of 220—57=163 degrees. With a velocity through the heater of 300 feet per minute, 2.22 B.t.u will be given off per square foot per hour, which gives a radiator efficiency of 163×2.22=360 B.t.u. Hence, 750,000÷360=2,100 square feet of radiating surface will be required in the indirect stacks. This applies to cases where the total air supply is taken from outside in zero weather. If a portion is returned from the building at 60 to 65 degrees temperature, the amount of heating surface can be reduced proportionately. If *all* of the air were returned to the stacks from the room at a temperature of 64 instead of being taken in at zero, the rise would be only 114—64=50 degrees instead of 114, and the total heat required would be only $\frac{50}{114} \times 750{,}000 =$ 330,000 B.t.u. per hour, in round numbers.

The average air temperature in this case would be $\frac{64+114}{2} = 89$ degrees, and the difference between the air and radiating surface, 220—89 = 131 degrees, giving a radiator efficiency of 131×2.22=290. This calls for 330,000÷290=1 140 square feet of heating surface, or a little over half that when the entire air supply is taken from outside. In a similar manner the surface may be computed for any proportion of outside and inside air mixed together.

When a fan is used in connection with a hot-blast heater, instead of gravity circulation, the method of computing the amount of radiating surface will be the same except the heater will have a higher efficiency due to the greater velocity of the air. For ordinary conditions, with low pressure steam, this may be taken as 1,800 B.t.u. per sq. ft. of surface per hour, when the air is heated from zero to 70 degrees for ventilating purposes, and 1,500 when the air is raised to 100 degrees or more for both heating and ventilation. While the efficiency will vary more or less under working conditions these figures will be found on the side of safety.

The formula for main heaters for ventilating purposes is $S_v = \frac{C \times 70}{55 \times 1{,}800}$, which reduced to its simplest terms, is

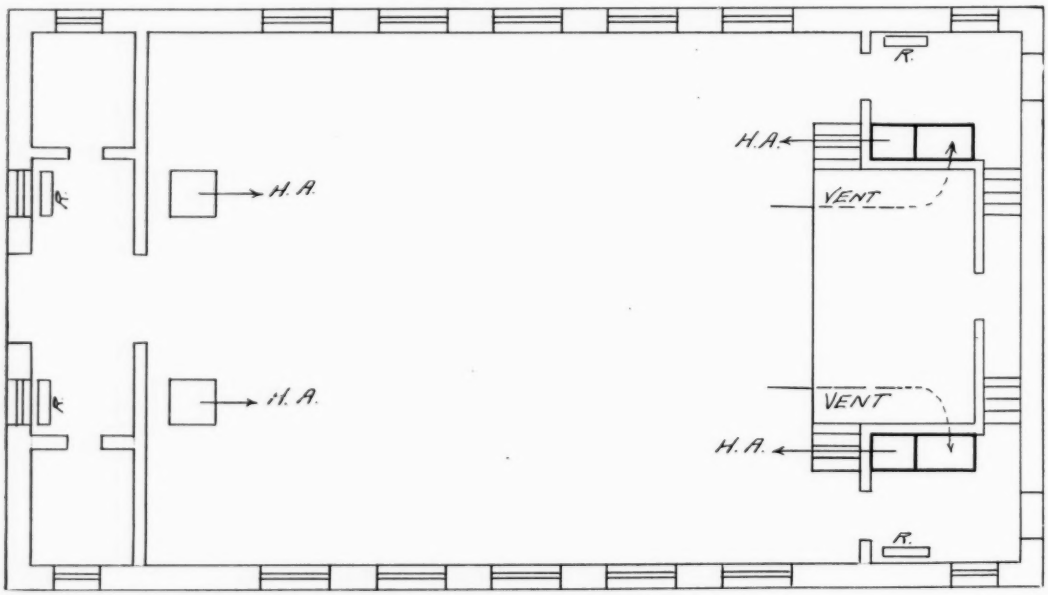



Fig. 2.

$S_v = (4)C \times 0.0007$, in which

$S_v$=square feet of heating surface in main heater, for ventilation only.

C=cubic feet of air to be warmed *per hour.*

When the room is to be both ventilated and warmed from the same heater the formula becomes $S_h = \frac{T \times C}{55 \times 1{,}500}$, which reduced to its simplest terms is (5)$S_h = \frac{T \times C}{82{,}500}$, in which

$S_h$=square feet of heating surface in main heater for both heating and ventilating.

T=temperature of air entering the room from fan system, as found by formula 3.

C=cubic feet of air to be warmed *per hour.*

Other computations relating to fans and ducts are the same as for other buildings of the same general class, such as schools, churches, etc., and need not be touched upon in the present case.

### Special Arrangements.

In closing, let us consider a few diagrams illustrating some of the general schemes employed in this class of work and the principles involved. No attempt will be made to go into details of construction as the average steamfitter will find no difficulty in applying the diagrams to practical work with the necessary changes to fit them to different cases.

The first arrangement, shown in Fig. 1, represents a typical method of heating and ventilating a small hall by means of a combination system. The heating is done by direct radiation, while the air for ventilation is warmed by two indirect stacks and delivered to the room through wall registers about 8 feet from the floor located on either side of the stage. The direct and indirect surface are on separate lines of piping, each controlled by a pair of valves, so it is an easy matter to cut out one or the other. If the indirect stacks are proportioned for warming the entire air supply in zero weather, there will be considerable surplus capacity much of the time, which may be utilized for heating if desired. In moderately cold weather the direct surface, or such portion as is necessary, may be used for warming the hall when unoccupied, and when the audience assembles, the direct system may be shut off and the indirect turned on, both heating and ventilation being done by the indirect stacks. The operation of changing over from direct to indirect heat is a simple one and involves only the manipulation of four valves, which should be located close together near the boiler in an accessible position. The indirect stacks should be divided into two or three separately valved sections for rough regulation, finer regulation being cared for by mixing dampers.

The hot-air uptake flues should be proportioned on a maximum velocity of about 300 feet per minute for the total volume of air to be supplied. Light wire grilles are preferable to cast-iron register faces on account of allowing greater freedom to air flow and also being more easily put in place. Discharge ventilation is provided by means of two uptake flues located back of the hot-air supply ducts as indicated. They are connected with register faces or grilles in the front of the stage by ducts, the positions of which are shown by the dotted lines.

The vents should be heated in order to accelerate the

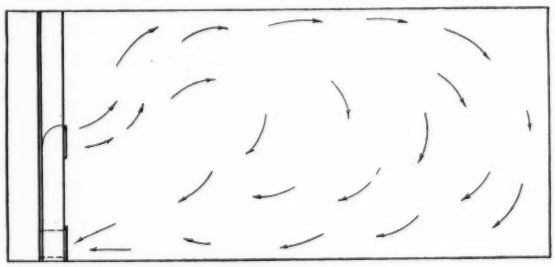


Fig. 3.

air flow through them, otherwise the flow will be sluggish and at times is liable to reverse and discharge cold air into the room.

The vent-flue heaters should be of open pattern and contain about 1 square foot of heating surface for each 50 cubic feet of air supplied to the room *per minute*.

The area of the vent flues should be about 30 per cent greater than the corresponding inlet flues, although in many cases they are made the same size with satisfactory results when well heated. While the velocity of flow through them will be somewhat less than in the supply flues, owing to the lower temperature of the air this will be offset to a certain extent by air leakage around doors and windows.

The same hall heated and ventilated by the indirect method is shown in Fig. 2. Direct surface is retained in the vestibule and small rooms near the stage, as this makes the treatment simpler. In this case additional hot-air inlets are placed at the other end of the hall, partly to equalize the heat distribution and partly to provide footwarmers near the entrance. The supposed air circu-

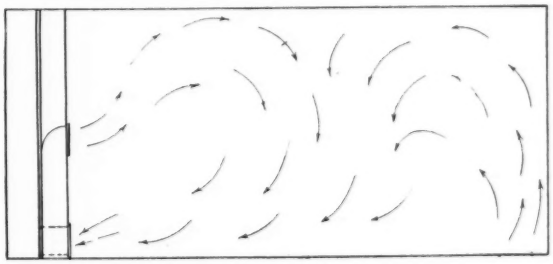


Fig. 4.

lation of the arrangements shown in Figs. 1 and 2 are illustrated in Figs. 3 and 4, respectively. While these will only be approximated in practice, they show the effect sought, and either should give a satisfactory distribution.

An important detail in the arrangement, illustrated in Fig. 2, is means of some kind for the recirculation or rotation of air through the indirect stacks, when ventilation is not required.

A plan utilizing the vent-flues for this purpose, which results in a considerable saving in cost of installation, is shown in Fig. 5. In this case the base of the vent flue is extended to the cold-air chamber beneath the heating stack, and switch dampers are so placed that the air entering the vent register may be either carried upward through the vent flue or downward through the return duct as desired.

Both dampers are connected with the same chain so that the change may be made with a single movement.

### Fan Systems.

When electricity is available, as is the case at the present time in all large towns and in many small ones, more positive results may be obtained by introducing a fan, either in the supply system or the vent system, or in both in some cases. The arrangements shown in both Figs. 1 and 2 may be improved by connecting the vent flues in the attic or any other convenient place with an electric fan for strengthening the exhaust ventilation, when the hall is well filled. This is especially desirable in muggy or heavy weather, when the air flow by gravity is apt to be sluggish. This not only increases the volume of air discharged from the room but also causes a slight vacuum effect, when the doors and windows are closed, which assists the inflow of air through the heating stacks. An arrangement of this kind is usually so designed that it may be operated either on the gravity or fan system as seems most desirable under different conditions, a switch damper operated from the basement serving to by-pass the air through the fan when desired.

As the size of the hall increases it will be better to use a fan for introducing the air rather than to exhaust it, as in this case it will be necessary to increase the number of inlets in order to get a satisfactory distribution. Increasing the number of inlets complicates a gravity sys-

(Continued on Page 185.)

# COLD DRINKING WATER DURING HOT WEATHER

*Pointers on How Plumbing Contractors Can Solve the Drinking Water Problem and Thereby Secure More Work in the Summer*

*By* Harold L. Alt

(Continued from Page 121 in the July 27th Issue.)

If it is assumed that each person in drinking draws out about ½ pint of water in obtaining each drink, then the 12 gallons would supply 12×8×2=192 persons in a rush from the storage, or (from Table II) the water would lose 18×32=576 B. t. u. per hour, which at 20 B. t. u. per lb. is 576÷20=29 lb. of water or 29÷8 1/3=3.4 gallons, which will supply 3.4×8×2 or 55 persons per hour continuously.

Where several drinking outlets are to be cooled at a common point the best arrangement is to place the outlets over one another vertically as near as possible and to put a cooling tank directly below in the basement with a riser run up from the tank to the highest outlet, intermediate outlets being branched off on the way. Such a scheme is illustrated in Fig. 5 and has been used in industrial work and post office buildings to some extent.

Where it is impossible to arrange outlets in a vertical line or where two or more outlets are located on each level, it is best to either use a separate tank under each group or to use one tank with a small circulating pump to keep the water moving around the circuit. This, as shown in Fig. 6, will involve the use of some electric power, will consume a greater quantity of ice but will, at the same time, deliver cold water to each outlet the instant the faucet is opened, provided the fixture branch is kept very short.

The method of calculating the size, length and capacity of the cooling coil does not admit any very close figuring, owing to the fact that the quantity of water consumed will—to a large extent—vary with the outside temperature, the number of persons supplied and the amount of wastage expected.

It has been found by experience that allowing for wastage the average maximum consumption of water from a drinking water system amounts to about one gallon per person per day. Therefore, if the number of persons is known and it is assumed they do the majority of their drinking during a period approximating eight hours, it is seen that the average-person-hour-rate is about one pint. Since the maximum use of any ordinary fixture is approximately double its average use the coil should have surface enough to cool to the proper temperature one pint per hour per person and to contain an additional pint per person as a storage reserve to serve during the peak load period.

The water, in which the melted ice is submerged, will probably never go down to less than 40 degrees F., when the heaviest load is on the fountain as it is being constantly warmed by the water inside the coil as well as constantly cooled by the melting ice. If it is assumed that this water has an average temperature approximating an intermediate point between 32 degrees F. (the temperature of the melting ice) and an average water temperature of about

$$60° - \frac{(70° + 50°)}{2} =$$

60 degrees, then the average temperature difference between the melted ice water and the water in the coil is

$$32° + \frac{(60° - 32°)}{2} \text{ or}$$

$$60° - \frac{(60° - 32°)}{2},$$

which equals 46 degrees.

Therefore, if the water surrounding the coil is at 46 degrees average temperature, and the water inside the coil is at 60 degrees average temperature, the average temperature difference is 60°—46°=14°.

Fig. 5.

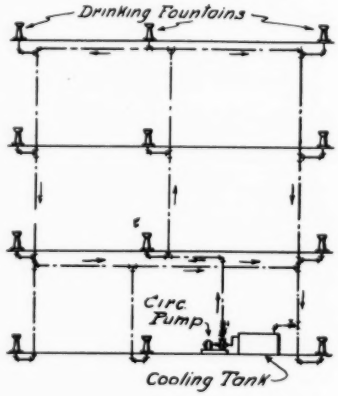



Fig. 6.

To allow for fouling, dirt, scale, etc., it is hardly permissible to figure more than 2 B. t. u. per square foot per degree of temperature difference. With 14 degrees' difference the transmission per square foot of coil will be 14×2=28 B. t. u. per hour, and at this rate every lineal foot of pipe in a coil will transmit B. t. u. as shown in Table I.

**Table I**

| Size of pipe | ⅜ | ½ | ¾ | 1 | 1¼ | 1½ | 2 | 2½ | 3 | 4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Factor | .177 | .219 | .275 | .346 | .434 | .494 | .622 | .753 | .916 | 1.17 |
| B. T. U. per Hr. Per lineal foot | 5 | 6 | 8 | 10 | 12 | 14 | 17 | 21 | 26 | 32 |
| Cap. gal. per lin. ft. | .01 | .016 | .028 | .045 | .078 | .106 | .174 | .249 | .384 | .661 |

Then if the number of persons to be served is known the coil may be determined as follows:

Suppose 500 persons are to be served from one cooling tank; required, length of coil and size of pipe. At a pint per hour per person the average use is 500 pints or 500/8= 62 gallons per hour. This amount of water cooled from a maximum of 70 degrees to 50 degrees drops 20 degrees and requires the absorption of $62 \times 8\frac{1}{3} \times 20 = 10{,}333$ B.t.u. From Table I it can be seen that a coil of various sizes of pipe will have the lineal feet as shown in Table II.

**Table II**

| Nominal Size of Pipe Inches | Total Heat Transmission B. T. U. | Efficiency of Pipe Per Lineal Ft. B. T. U. | Total Length of Coil Lineal Ft. |
|---|---|---|---|
| ⅜ | 10333 | 5 | 2067 |
| ½ | 10333 | 6 | 1722 |
| ¾ | 10333 | 8 | 1292 |
| 1 | 10333 | 10 | 1033 |
| 1¼ | 10333 | 12 | 861 |
| 1½ | 10333 | 14 | 740 |
| 2 | 10333 | 17 | 610 |
| 2½ | 10333 | 21 | 490 |
| 3 | 10333 | 26 | 400 |
| 4 | 10333 | 32 | 325 |

But the capacity of the coil for an overload period must not be less than the average use (62 gallons). The cubic contents of the various coils listed in Table II is shown in Table III herewith.

**Table III.**

| Nom. Size of Pipe inches. | Length of Coil Lin. Ft. | Gal. per Lin. Ft. | Contents Gals. |
|---|---|---|---|
| ⅜ | 2067 | .010 | 21 |
| ½ | 1722 | .016 | 28 |
| ¾ | 1292 | .028 | 36 |
| 1 | 1033 | .045 | 47 |
| 1¼ | 861 | .078 | 67 |
| 1½ | 740 | .106 | 79 |
| 2 | 610 | .174 | 106 |
| 2½ | 490 | .249 | 122 |
| 3 | 400 | .384 | 154 |
| 4 | 325 | .661 | 215 |

From this it can be readily seen that the proper size of coil would have to be of 1¼-inch pipe or larger in order to give the required storage capacity. Suppose it is decided to use a 1¼-inch pipe coil with 861 lineal feet of pipe.

The second portion of the problem consists of so arranging this pipe in the cooling tank to allow proper manipulation of the ice, etc. The governing factor in the size of the cooling tanks is: "How often will it be iced?" The same cooling tank will do the same work at half the capacity, if iced twice a day as it will if iced only once.

If it is assumed that the tank in question will be iced only in the morning and must last all day and knowing the average B. t. u. per hour to be absorbed from the drinking water to be 10,333, as has already been determined, then for an eight hour day the total B. t. u. for water will be $10{,}333 \times 8 = 82{,}664$ B. t. u., and allowing at least 25 per cent for tank and piping losses will bring the total heat absorption up to 82,664 plus 25 per cent of 82,664, or 103,330 B. t. u.

Every pound of ice, which is melted absorbs approximately 142 B. t. u., so that the total number of pounds of ice per day is $103{,}330/142 = 730$ lb.

In moderate weather probably one 300 lb. cake or two 200 lb. cakes will be used, while in warm weather two 300 lb. or three 200 lb. cakes would be needed. For extremely hot days the requirements would go up to three 300 lbs. or possibly four 200 lb. cakes so that the tank should be designed to have a cubic contents (inside the limits of the pipe coil) of not less than 900 lb. of ice which at 60 lb. per cubic foot means 900/60 or 15 cubic feet. The size of a standard 300 pound cake of ice is approximately 44 inches × 22 inches × 11 inches, while a 200 lb. cake is 32 inches × 22 inches × 11 inches. Therefore to get in three 300 lb. cakes, the clear space in the box must not be less than 44 by 22 by (11×3) while for four 200 lb. cakes the space must be 32 by 22 by (11×4). Allowing 12 inches for clearance and another 3 inches for the coil space together with 12 inches over the ice and 3 inches under, for the coil, makes the box either $(44+12+3+3) \times (22+12+3) \times (11 \times 3+12+3+3)$ or $62 \times 37 \times 51$, while for 200 lb. cakes the box will be

$$(32+12+3+3) \times (22+12+3) \times (11 \times 4+12+3+3)$$
$$50 \quad \times \quad 37 \quad \times \quad 62$$

From this it can be seen that a box, 62 inches long, 54 inches wide and 37 inches deep, will accommodate either contingency.

Supposing the centers of the coil pipes to be 1½ inches from the inside of the tank the lineal feet of pipe for one complete circuit around the sides will be $(62-3) \times 2 + (51-3)2 = 214$ inches or about 18 lineal feet. Since the water line is 12 inches below the top, the vertical height under the water is 25 inches which, if the coil pipes are spaced 3-inch centers, will give 25/3 or 8 spaces which is equal to 9 pipes. Then the total lineal feet of coil around the sides of the tank will be 18 lineal feet × 9 pipes high or 162 lineal feet.

On the bottom the width is 51 inches wide, which at 3-inch centers is 51/3 or 17 spaces, which is 18 pipes but since the two outside pipes have already been counted on the side coils they must be deducted from the bottom piping leaving 18—2 or 16 pipes each, say 60 inches long or 80 lineal feet more.

The total coil for one row of pipes is then 162+80 or 242 lineal feet, while according to the calculations 861 lineal feet are needed, which means the coil must be about 861/242 or 3+ pipes deep. This is rather unusual, and it would be better practice to use either a larger size pipe, increasing the box accordingly, or to split the box into two or three boxes of smaller size.

## PERSHING AT THE TOMB OF LAFAYETTE.

By Amelia Josephine Burr, in "Silver Trumpet."—Copyright by George H. Doran, New York.

They knew they were fighting our war. As the months grew to years
Their men and their women had watched through their blood and their tears
For a sign that we knew, we who could not have come to be free
Without France, long ago. And at last from the threatening sea
The stars of our strength on the eyes of their weariness rose
And he stood among them, the sorrow-strong hero we chose
To carry our flag to the tomb of that Frenchman whose name
A man of our country could once more pronounce without shame.
What crown of rich words would he set for all time on this day?
The past and the future were listening what he would say—
Only this, from the white-flaming heart of a passion austere,
Only this—ah, but France understood! "Lafayette, we are here."

# LEGAL QUESTIONNAIRE

*What Are the Advantages and Disadvantages of Incorporating a Plumbing and Heating Business?—This Question Is Here Answered in a Most Careful Manner**

*By* "The Judge"

### ADVANTAGES AND DISADVANTAGES OF INCORPORATING THE PLUMBING BUSINESS.

Editor "Domestic Engineering":—During the past year several plumbing firms in my city have incorporated their business. I am wondering whether it would not be a good plan for me to take the same action and form a corporation of my own firm, which does plumbing and steamfitting? What would you advise?

S. W. T.

Answer:—While there are many elements which should enter into your decision regarding the incorporation of your business, which I can only guess at from your question, I might say that, as a general proposition, a man who does business in these days without the protection of incorporation is usually a very foolish man.

There are, of course, some disadvantages in doing business as a corporation, but they are, in most states, outweighed by decided advantages. First I want to touch upon some of the advantages with the caution that if the reader is seriously considering putting his business on a corporate basis he should consult an attorney who can advise him with all the facts before him.

Perhaps the greatest advantage and the one which originally caused business men to form corporations was that of protection in a financial way. Partners, even the most trusted, have done things which their partners did not like, to say the least, in making the firm liable on notes and on contracts. Usually, and with very few and mostly immaterial exceptions, a man's personal property is not liable for any debts or liabilities of a corporation, in which he is a stockholder. Only the assets of the corporation are liable to be taken by creditors of the corporation, and a stockholder's own personal bank account and other property cannot be reached by creditors of the corporation.

In these days of auto truck transportation and the difficulty of securing competent drivers, it is not infrequently the case that a man doing business as an individual or as a partnership, may find himself liable to the extent of several thousand dollars for the negligence of an employe of the firm, while doing the firm's business. Even if the firm carries liability insurance, the partners or the individual will be liable for the amount recovered, if any, over and above the amount of the policy of insurance.

Even if the liability of the corporation wipes out all its assets, still the stockholder who owns property, real or personal, will save all that he holds in his own name or that of his wife. By incorporating the business a man safeguards his own property so that his former partner, now a fellow stockholder and usually an officer, cannot do anything that will make the stockholders liable for more than has been put into the corporation.

Up to a year or two ago, many states exempted from taxation, particularly the tax on income, all dividends from stock held in corporations organized under the laws of the state where the stockholder lived. Last year some of the states levied a tax of one per centum on the dividends from corporations on the basis of the Federal Income Tax return. What will be levied in the future, as the war goes on, no one knows of course, but it is safe to state that the tax will be no greater on stock dividends than on the income of an individual doing business as an individual.

It is perfectly possible and legal, for a man who conducts a business from which he receives an income of around $3,000 to $4,000 a year, to incorporate his business, take sufficient salary to leave him within the income tax limit of exemption in his state, and pay little, if any, tax on the income above the tax exempt limit. The matter of taxation, as between an individual and a corporation, is one into which so many factors enter that I cannot go into detail and cover them all. Each case must stand on its own feet. I can only say that one example, which I heard about, will show the advantages of incorporation with respect to the Federal Income Tax Law. It was the case of a steel manufacturing business with a capitalization of $500,000 and a net income yearly from operations of $250,000. If this business had been carried on by an individual it would have cost him around $121,000 a year tax, under the War and Excess Profits Act; if carried on by partners, the tax would have been around $100,000; if carried on by a corporation formed after the war began, it would have paid a tax of around $60,000; and if the business had been incorporated before the war, the tax would have been some $40,000. This is perhaps an extreme case, but it shows that by investigation a business man may be able to save a proportionate amount of his income by incorporating.

Another advantage of incorporation is that, if the owner dies, his business can be carried on by his family without the necessity of going to court and securing an order for the executor, administrator or trustees to carry it on. It is by far the cleanest and most economical shape, in which a man can leave his business to his wife or children. It is also the simplest form in which to do business, if you wish to sell a part of it to someone, who is putting capital into the firm, to permit of enlargement of its capacity or to help it over the hard places. In fact,

*Every Effort is made to the End that these Answers may be authoritative. However, we cannot assume any Responsibility because of the very Nature of the Service, which is rendered without a personal Interview.—Editor.

it may be said without much qualification, that doing business as a corporation is the cleanest method of carrying on a business.

Probably one of the most frequent objections made by business men to doing business as a corporation is that reports have to be made to the state and federal authorities and meetings have to be held once a year at least. While this may seem like a disadvantage, it is usually made by men who could not tell you, even if they spent considerable time investigating, just where the business stood in the matter of cost of doing business. One of the big business reporting companies has stated that the cause of a large part of the business failures in a given year is the fact that so many, many business men do not know what it is costing them to do business. They are making large sales, perhaps, at their own expense. Education among associations of plumbers has helped many members to realize that their overhead expenses are something that cannot be tossed out of calculation by a mere wave of the hand. If such men should do business as a corporation and have to file a report of their condition on a given date, it would be a great blessing in disguise, for undoubtedly they would learn just where they stand and correct the mistakes.

The law permits a man to incorporate and escape certain liabilities as an individual, but it requires him to make statements as to his business condition. This not only protects the business men who do business with him, but also keeps him up to the mark.

If you find a large majority of business men pursuing a certain line of conduct, you can be reasonably sure that there is very good reason for it. I have read that in New York State there have never been so many corporations formed as there have been since the War Tax laws went into effect. There's a reason.

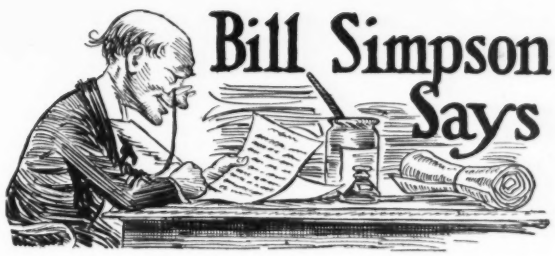
The cost of forming a corporation is not great. The extra expense to the man who has never kept a satisfactory set of books and therefore could not make a report without difficulty, is not large and should be considered a necessary expense. I am a lawyer and therefore am under no necessity of incorporating, but if I were a business man and had had the experience, which I have had as a lawyer, with business conditions, I would not do business for five minutes without incorporating. There may be exceptions to this general statement, but they will only prove the general rule.

## YOUR COUNTRY.

*"And for your country, boy, and for that flag, never dream a dream but of serving her as she bids you, even though the service carry you through a thousand hells. No matter what happens to you, no matter who flatters you or who abuses you, never look at another flag, never let a night pass but you pray God to bless that flag. Remember, boy, that behind officers and government, and people, even, there is the country herself; your country, and that you belong to her as you belong to your own mother. Stand by her, boy, as you would stand by your own mother."*

Edward Everett Hale.

Arthur F. Covey has bought out the interests of his partner, Alfred B. Goss, in the plumbing, stove and tin ware business, conducted by them at Rochester, N. H., under the firm name of the C. M. Bailey Co. Mr. Covey was senior partner and hereafter will do business under his own name, continuing at the old headquarters on North Main Street.




(With Apologies to K. C. B.)

I got a post card yesterday
* * *
From a neighbor's boy
* * *
Who was an aviator
* * *
With the American Army
* * *
In France.
* * *
He said: "Dear Mr. Simpson:—
* * *
I am well and happy.
* * *
Have sent down seven
* * *
German machines so far.
* * *
Hope to make it ten, soon.
* * *
They may 'get' me
* * *
Before the war's over
* * *
But I'm willing to go
* * *
For the United States".
* * *
Last night I picked up the paper
* * *
And the very first thing I saw
* * *
Was a Cablegram saying that
* * *
This young chap had been killed
* * *
In an Encounter with the Boche
* * *
Flying circus.
* * *
But it went on to say,
* * *
That he had shot down three of
* * *
The machines before they got him.
* * *
Poor little Jim! They got him,
* * *
As he thought they might.
* * *
But he made them pay a ten-to-one
* * *
Price for the privilege.
* * *
I can't go over and avenge Jim's death,
* * *
But I can help a lot back home
* * *
By buying war securities
* * *
(And I won't forget to buy
* * *
War Savings Stamps—a lot
* * *
Of people do forget these),
* * *
And I can help, too, by
* * *
Keeping business going
* * *
Up to the top notch
* * *
To help Win the War.

# QUESTIONS & ANSWERS

## HOW TO WORK A FEED GRINDER FROM A WINDMILL.

Editor "Domestic Engineering":—I have a problem confronting me, which you have probably been called upon to solve before this, although I have never seen it in your valuable publication.

I have a customer who wants me to construct an apparatus that will enable him to use the power of a windmill to operate a small feed grinder. I think it is possible to do it, and I have heard it has been done, but I have never seen one connected, so I do not know how to do it in a way that will give satisfactory results.

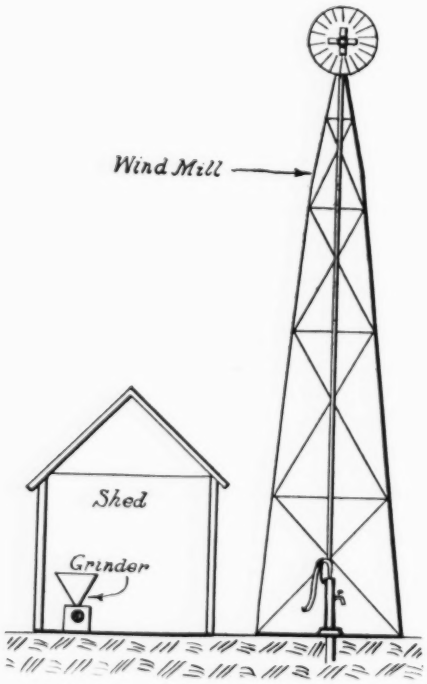



Fig. 1.

In this case it is not necessary to grind a large amount of feed in a hurry. A slow steady grind is wanted, day and night, if necessary. Fig. 1 is a rough sketch of the location of mill and grinder. Any assistance you can give me will be greatly appreciated.

Malta, Mont. P. S. E.

This is a question in farm mechanics. It relates to windmills, of course, which is plumbing work. But it is the application of windmill power for mechanical purposes and involves the use of special mechanical devices such as gearing, etc., which do not rightfully come within the scope of this paper.

Our experience in such things is very limited indeed, but we will do our best to help correspondent.

The action of an ordinary windmill is about as follows: Wind blows against face of wheel, which is composed of sloping sails or blades. The wheel therefore revolves, the speed of revolution depending upon velocity of wind, and the resistance of the mill.

The axle of the wind wheel has a speedy rotary motion. This is converted into a slow up and down reversing motion by special mechanism up at the mill head. The up and down motion is transmitted by a rod—from mill head down to pump head. The rod extends down inside pump and works a plunger which lifts water. The rod can be disconnected from pump usually by unscrewing a bolt.

Then when wheel turns, the rod works idly with an up and down stroke of perhaps 8 or 10 inches.

The problem confronting correspondent is to convert this up and down motion into a rotary motion at his grinder which is equipped with a pulley wheel. But it happens that the down stroke of mill rod cannot well be used for turning grinder, because the rod is liable to "buckle" and break. It is not generally used in pumping. The pumping is done on the up-stroke.

The ordinary mill rod, or pump plunger rod particularly down a deep well, is very much like a rope. You can pull, but cannot push with it.

Therefore in working the grinder it is probable that only the up-stroke of mill rod can be used, the down stroke running idle. This means that some kind of a ratchet attachment is necessary, where grinder pulley is connected to mill rod, that is if correspondent has to connect it to mill rod.

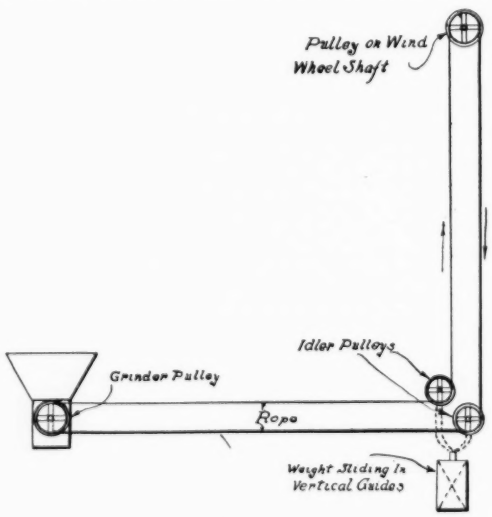



Fig. 2.

If, however, he can arrange to connect a pulley somewhere to revolving arch at mill wheel on top, he may rig

up a rope transmission from grinder up to the mill head.

Of course he must make allowance for shrinking and stretching of rope during wet and dry weather. Thus, we think, he will have the best kind of power transmission possible under the circumstances.

If he can rig up his pulleys as shown by Fig. 2, he should be able to get good results.

The motion of wheel is directly communicated to grinder. It is a continuous motion, which is better than the intermittent rod motion for grinding. It is easier on the mill and is simple. The rope is held "taut," by the idler pulley and sliding weight. The idler weight slides in a guide and accommodates shrinkage of rope without increasing strain on it. The "get-up" of this mechanism is up to correspondent. He can do it if he has the ingenuity.

Perhaps, however, it will pay him to write the wind mill manufacturers and see what they have to offer him in this line. They may have some kind of a device ready-made, which he can use to better advantage.

## TIN CONSERVATION TO AFFECT SOLDER AND OTHER ALLOYS.

The War Industries Board has outlined its policy in regard to the conservation of pig tin.

The board calls meetings of representatives of each important trade using tin, states the necessity for economy, asks for patriotic co-operation and seeks advice as to how to get the results desired. Each industry is asked to organize, to consider the problem and submit specific recommendations. These recommendations are digested and sent to everyone in each trade concerned. Conferences are held with those who may not agree with the recommendations so as to get as near to complete unanimity as possible. A set of recommendations or regulations is then drawn up for each industry, and these are enforced by the authority of the War Industries Board.

The various uses of tin by different trades are classified in an ascending scale of importance.

First.—Wasteful uses due to carelessness, ignorance or indifference. Wastes due to faulty practices, which might be cut off not only without injury to anybody, but rather to the definite pecuniary advantage of manufacturers.

Second.—Uses non-essential in character, such as the coating of articles with tin for ornamental purposes solely. Uses which could be cut off without injury to any individual or firm, provided all acted alike.

Third.—The employment of tin for purposes which in themselves are useful and desirable, so that their elimination would involve a certain amount of sacrifice on the part of manufacturers or consumers, but which are in no way connected with the vital needs of the country in relation to the war.

Fourth.—Uses directly for war purposes either by the government itself as a manufacturer of war materials or by manufacturers who are making war materials for the government.

Uses under "first" and "second" can and should be cut off at once. Under "third" curtailment is not in itself desirable. It will result in a certain disorganization of industry and reduction in economic efficiency and ought to be avoided if possible. But the sacrifice will probably have to be made. Lastly, come the direct war requirements, which must be met in full or military efficiency will suffer.

The following results have already been accomplished:

1. Solder, bearing metals, etc.

Standardizing: There are scores of compositions used in bearing metals and solder. The bureau of standards has completed an investigation of bearing metals and has suggested elimination of all but four grades. This recommendation was adopted and it is stated that a saving of about 25 per cent in amount of tin will be affected. The bureau of standards is making similar investigations concerning solder. The can companies have reduced the percentage of tin in their solder to 40, thus saving from 8 to 10 per cent without injury to the industry.

2. Brass and bronze ingots and castings.

Most of this business is directly or indirectly for government account. Considerable reduction could be made in tin content without reduction of efficiency. Large savings have already been made by automobile and other machine manufacturers by substituting for all metal bearings, case bearings with thin lining shell ($\frac{1}{16}$ inch to $\frac{3}{32}$ inch) of high-grade babbitt. Straits tin is often specified on the assumption that it is the purest tin. Banca is even purer than Straits or Australian, and electrolytic tin is as pure.

3. Tin plate.

Plans for the conservation of tin plate have long been in the hands of the committee on the conservation of tin plate. In co-operation with the trades concerned large economies have already been effected. The manufacture of plate for many less essential uses, such as roofing, for store boards, for fire doors, etc., has been eliminated by agreement. Tobacco manufacturers have just reached an agreement by which black plate will be substituted for tin plate for most tobacco cans, effecting a saving of probably 750,000 base boxes of tin plate per annum. In addition, the quantity of plate required for export has been greatly curtailed by the regulations of the War Trade Board restricting export to plate which is to be used for specific purposes.

## Obituary

### Joseph A. Langdon.

Joseph A. Langdon, senior member and president of the Jos. A. Langdon & Sons Co., heating contractors in Pittsburgh, Pa., died at his home in that city on Tuesday, July 23rd, in his 62nd year. Mr. Langdon was born in Pittsburgh and he had been connected with the heating and ventilating business since 1873. His wife, two daughters and two sons survive him. His youngest son, T. Wallace Langdon, is now serving his country as a member of the quartermaster's department at Camp Holabird, Md.

### Samuel E. Dibble.

Samuel E. Dibble died at his home in New Haven, Conn., on Wednesday, July 17th, in his 77th year. His death brought to a close a successful business career, extending over a period of more than half a century. Since 1864 Mr. Dibble had conducted a plumbing establishment on Grand Street, New Haven, continuing his active connection with the business until his last illness, three weeks ago. Mr. Dibble was born in Newtown, Conn., in 1842. At the age of 17 he went to Waterbury and served a five-year apprenticeship at the plumbing business and then went to New Haven and started out for himself. He is survived by a widow and twelve children. One of his sons, Albert Dibble, was associated with him in the plumbing business, and another is serving with the American military forces abroad.

# RAYMORE *and* COMPANY
# PLUMBING *and* HEATING
# SUPPLIES

*A Story of Patriotism in the Plumbing Supply Trade in New York City*

*By* Daniel Louis Hanson, Author of "Moses Irons' Stories"

"NO, the good old world with its happy hours, long and pleasant days, brotherhood of man and the helping hand clear around the equator is gone!" and Nathaniel Raymore swung his chair around till his back was turned towards Phil Harton, his salesmanager. But Harton knew that it wasn't discourtesy which caused the sudden revolution of the swivel chair.

I.

After a little the Boss faced Harton again: "It will be an entirely different world. It already is that! Where are the ambitions and visions of yesterday! I am an old man, Phil, without son to perpetuate my business, without a daughter to give me grandchildren in these times, when the soft arm of a child is stronger than a century-old oak in its effect on us weary-hearted and stoop-shouldered ones, and I am hard hit,—very hard hit! There is no Raymore, nor other descendant of mine to carry into the front trenches or to the battle line on the seas the ideas of mine regarding country and flag, which in this time have become ideals."

"Yet you are spared the heartbreak of seeing son, or son's son, going out to what may be his grave. That's agony!" Harton consoled him.

Nathaniel Raymore turned on him fiercely: "What damnable treason are you preaching, Harton! The agony comes from having **no one** to go. Every time a regiment comes marching down Fifth Avenue, and I see weeping mothers, sisters and sweethearts and men, the fathers of those swinging onward, with misty eyes, I feel, Phil, as if God had pronounced a curse on me. I alone have no one to weep over, no one to be proud of, no one to tie me to the fields of France and Italy with that love which can only come from having offered up sacrifice. Barren, barren of family life is my doom, has been for long, but the curse of it never came to me till now."

But Harton was determined to be consolatory; he knew the evil effects of such a condition the Boss was now in, on the morrow's work,—and the morrow had stern duties for Mr. Raymore. "Well, all that is true, but would you want to change places with Riverton?"

The Boss almost tipped over the chair in his eagerness: "Riverton—Riverton! God bless you, old Riverton!" and Raymore apostrophised some one he seemed to see back of the salesmanager. "Why, Riverton, you are the happiest man in this entire plumbing supply line! Riverton, your name will live years after mine has crumbled to dust with the stone tablets on which it is engraved!"

Nathaniel Raymore, his face aglow and his eyes sparkling, told to Harton the story of Robert Riverton's Sons.

II.

The firm was founded by the first Robert Riverton, a mechanic working on copper work for ocean-going craft down on West Street, near where now the facade of the International Navigation Co.'s buildings and piers rears itself. The founder of the business knew less about plumbing than is known by a jungle liver in Africa.

There was no plumbing in those days, just copper work on ship bottoms and deck covering. It is questionable if that Riverton knew of any other bathtub than North River, where the piers kept the current and tide from sweeping away the bather. He died in 1840.

The second Robert, already a boy in the business when his father died, stuck to ship work but added to it brewery work as well, steaming kettles, cooling vats and so on. Later—just after he came back from the Civil War—for patriotism has been woven into the fabric of the Rivertons—he took up jobbing of pipe. From that it was simply a matter of evolution to fittings, brass goods and so on. Then came plumbing in the '70's, with pan closets and all the contraptions, which in those days were called "bathtubs."

The third Robert went into the business when he was eighteen. He had chored at it since he left his mother's lap, and with him came what might be called the "visionizing" of the ambitions of the House of Riverton. Up till then it had been simply money making, from then on it was also that of establishing a business, which would mean something to the world in the way of development of the line in which the House of Riverton dealt.

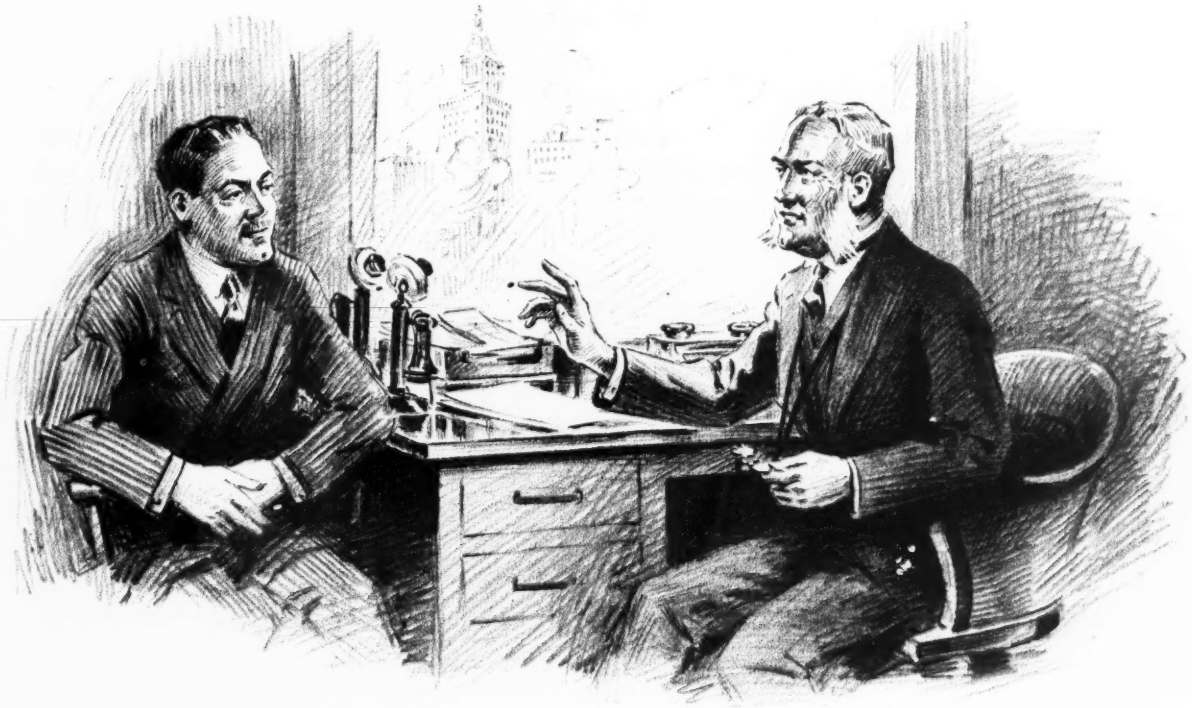
"Business means more to many of us than the mere gathering in of the dollars, Phil; we are trying at the same time to do our bit in the betterment of the world. I wouldn't give two shakes of a lamb's tail for a man who has not that ideal tucked away in his head somewhere."

Robert Riverton Sons—the name was changed in 1875—stuck to the old location, for New York centered around Canal Street in those days, but put in a showroom in the early '80's, which most of us looked upon as silliness. As a matter of fact we were sore that the third Riverton should disprove the correctness of the adage: "Three

generations from shirt sleeves to shirt sleeves." Ah, well, the next lot would take the tumble.

Robert, the Third, went to California for his wife, and those who met the transplanted bride on her first arrival in New York wondered at how much she looked like her husband; later in life that likeness was accentuated. There were five children—or was it six—three boys and three girls, a boy and a girl died in early infancy, so four remained, the two oldest being boys. These two boys were to be the best in the world, according to Robert, the Third; just how the world had gotten along so long without these two precocious youngsters was a frequent cause for voiced wonderment at some of the trade meetings of those days. Occasionally a jealous father would express himself to Robert, the Third, at which the happy father smiled that course did wonders from the first, so much so that Robert, the Third, waxed confidential on the subject with us. And we, liking Robert, the Third, were kind to him. Wasn't he pretty soon due for a sad jolt!

"Robert shall have sales, and Raymond the manufacturing," said the doting father, and read extracts from letters the two budding business men sent him. Naturally he didn't keep to himself the ambitions he had for the two lads, but discussed it with his department men. As they listened, they began to wonder where they were to get off! Several of them began looking around for other jobs, I took a couple, others I advised to stick, for I reasoned that the two lads were bound to fail. And where would poor Robert, the Third, be then, his ambitions and organization both shattered.



"It will be an entirely different world. It already is that! Where are the ambitions and visions of yesterday!"

pitying smile of his: "You really must come up and see my boys. Can't you run up for over Sunday?"

Robert, the Fourth, we called the elder of the two, and Raymond the other. Neither looked like the parents, and from that we drew even more reasons for expecting a failure of the Riverton crop.

While they were youngsters the business grew apace; "leaps and bounds" was true of its growth. That Robert, the Third, wouldn't do the business according to the long accepted ideas, he was always shooting to one side and pulling in ahead of us. Robert was honest enough, but he didn't play quite fair in not showing his hand to us old timers. Maybe that was why he got ahead of us. Of course, the organization grew, too; as New York City swept farther north, the Riverton Sons put on more and more city salesmen; there were so many of them that they simply had to grub for business where there was no business,—and they found it!

In the early '90's the two boys went off to school somewhere—oh yes, at the Massachusetts Tech, and of

In 1903 the first of the two graduated from Mass. Tech. and came into the store as city salesman. The other appeared in 1905. There was only two year's difference in their ages. He was put up at that galvanizing plant, which Riverton Sons had at Newburgh.

They were likable fellows, good to look at and polite to a fault,—both Robert Third and his wife had attended to that last,—in short they were like so many other American boys of those days, agreeable and of little stamina—at least so it seemed. Everyone was sorry for the Rivertons, the business would have to be carried on by outsiders after Robert, the Third, passed away.

So the years went, and we didn't see much of the boys. One was a mighty good football player, and the other had golfed to some extent, but even those accomplishments were not kept up, the boys were sticking to business, possibly they had some endurance to themselves, even if the brilliancy of the earlier Rivertons was missing. Every one hoped so for the parents' sake.

(Continued on Page 184.)

# *The* DAY BOOK *of the* BON TON DE LUX PLUMBING & HEATING CO.

*Jerry Dolan's Record of the Interesting Happenings of the Day*

(Continued from Page 149 in the July 27th Issue.)

**July 27, 1918.**

The fish are biting up near Avon.

**July 28, 1918.**

The fish were biting. We got the limit, all big ones, but the biggest one got away and took a brand new Wilson wobbler and 50 feet of line with him

**July 29, 1918.**

It sure makes a fellow laugh these days to pass the grocery stores and see the nice green vegetables, piled up in the windows, and right over them the "Cash and Carry" sign, because, when I get home at night, I know that I can just hop out into the garden and "dig and carry" all the vegetables we need for the next day and, honestly, our potatoes and, in fact everything else, from our garden, tastes better than the common stuff you buy in the stores. There ain't very much business these days, but such as there is is the real stuff. It keeps us busy, although every job looks like the last one, but it seems as if as soon as one is finished, another one bobs up.

**July 30, 1918.**

A lady called up this morning, and I happened to answer the phone, and she wanted to know if we installed hot-water heating plants, and so I told her that we surely did, and then she goes on to say that she wants us to come out and give her an estimate on a plant for her house, because she is getting five or six other firms to bid on it, and she wants to find out who will give her the best price. Well, I told her that if she was getting that many bids, that ought to be enough for a job of that size, and then she says that of course she knows that material is high and labor is scarce, but she wants the bids now and then perhaps she will have the plant installed next year or the year after. You bet, when she told me that, I told her there was no use going any further because the Bon Ton De Lux Plumbing and Heating Company had signed a pledge with Mr. Hoover to conserve on everything during the period of the war, and as we figured that it cost us at least Five Dollars to properly estimate a heating job, we were going to conserve that Five Dollars by using our time for other purposes. And I guess that from the way she banged up the receiver, she was kind o' mad about something.

**July 31, 1918.**

The salesmen keep coming around here these days, and they all say that nobody is buying anything, but they have to come around so they won't miss anything, and, as we got three little houses to finish, I divided the business and gave one set of finishing goods to each of three supply houses, and then we bumped into another place where a little standardization would help a whole lot. You know you can't run a plumbing shop right these days, unless you got some of those boxes on your shelves with the yellow labels on the ends, because, if a new customer should come in and not see some of those yellow labels, he might think he had gotten into the wrong store or something like that, and so, when Vic came around a while ago, we bought some of the traps that he sells for the Wolverine outfit, and, after the supply houses had sent these fixtures out to the jobs, Hank went out there with some traps and a little pipe and a few fittings and bibbs to finish 'em.

**August 1, 1918.**

And everything went together as slick as a whistle at the first job, but at the second one he found that the waste coupling on the sink wouldn't fit the sink trap, and so he had to hike down to the supply house and swap it for one of the right size, and at the third house he had the same trouble again and that made another trip to the supply house. Come to look into it, those sinks each had a different connection, 1¼, 1½ and 1⅜ inches, and perhaps if we had gotten some of them from the other supply houses we might have found two or three more sizes. It wouldn't make much difference to the plumber whether they had a 1¼ or a 1½-inch opening and spud, if they only used the same size. Of course, you can get traps to fit each size of spud, but there's no sense in that. Perhaps the fellows that make the enameled ware think that if they make an odd sized spud it will bring them the trap business, but they may as well forget it.

**August 2, 1918.**

Before the war, I mean before I got married, I used to drop into Frank's barber shop three or four times a week, and so I always got a chance to look at the pictures in Colliers, but now we're Hooverizing and that means shaving at home, and so I subscribed to Colliers, and in the issue for July 20th, they had a full-page article on "The Vital Importance of a Coat Pocket," and come to find out it was nothing more nor less than a plea for standardization, so it looks like the manufacturers of plumbing and heating goods had better get on the standardization wagon.

(To be Continued.)

September 18 and 19, 1918.—The fall meeting of the National Association of Brass Manufacturers, in Cleveland, Ohio.

October 14 and 15, 1918.—The annual meeting of the American Society of Sanitary Engineering, at Chicago, with headquarters at the Congress Hotel.

October 14 to 17, 1918.—The annual convention of the American Public Health Association, at Chicago.

October 16, 1918.—The fall meeting of the Central Supply Association, in Chicago.

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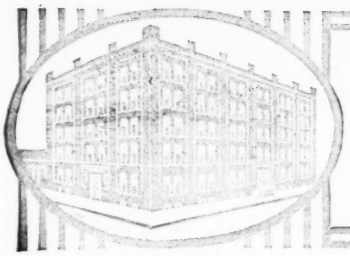
**Late News from Alabama.**

Jim Sullivan, of 1831 Third Avenue, Bessemer, was recently awarded the contracts to install plumbing and heating systems in the Modern Perry Building, the Orleans Apartments and a Baptist Church.

S. E. Scholze, of Birmingham, will install plumbing and heating systems in the Walker Building, the Norwood Hospital and in a four-apartment house on Twenty-fourth Street.

The Williams Plumbing Co., of Birmingham, has installed the plumbing systems in the residences of Sam Fowkes and Mrs. M. S. Morris and in several apartments in that city.



# Among the Wholesalers and Manufacturers

## NEW SUPPLY HOUSES OPENED AT NORFOLK, VA., AND BOSTON, MASS.

The Tidewater Plumbing Supply Co., which was recently incorporated, has opened a plumbing and heating supply business at Water, Taylor and Division Streets, in Norfolk, Va. Abram Watner is secretary and treasurer of the company, and he will be in active charge of its affairs.

The Boston Supply Co. is the style of a new concern which has engaged in the plumbing and heating supply business at 53 Haverhill Street, Boston, Mass. The managing director of this business is Mr. Gould, for some years past associated with the Dalton-Ingersoll Mfg. Co., also of Boston.

## BISHOP & BABCOCK CO. NOW ITS NAME.

The Bishop-Babcock-Becker Co., of Cleveland, O., has just announced that its name has been changed to the Bishop & Babcock Co.

## LOS ANGELES OFFICE IN LARGER QUARTERS.

Ernest Mehring Co., of Chicago, announces that its office in Los Angeles, Cal., has been moved from the Wilcox Building to larger quarters at 600 Metropolitan Building.

## TRADE EXTENSION PUBLICITY COMMITTEE MEETS IN PITTSBURGH.

### Formulates Plans for Future Activities.

The Publicity Committee of the Trade Extension Committee held a meeting in Pittsburgh, Pa., on Tuesday and Wednesday, July 23rd and 24th, attended by every member of the committee. Long before the hour set for the meeting every member was on the scene with a large amount of statistics and data on the work, accomplished and with an abundance of well-thought-out plans and ideas for broadening the scope of the campaign and making it more beneficial to absolutely every one connected with the plumbing and heating business. The ideas and suggestions presented during the two days' session resulted in the framing of a well-formulated plan of action for the Trade Extension Committee's future activities. This plan will be submitted to the Finance Committee for its approval at its next meeting.

James F. Conran, chairman of the Trade Extension Committee, addressed the meeting on Tuesday and received a hearty vote of thanks for the excellent and practical advice and suggestions which he presented so ably and enthusiastically.

On Wednesday W. S. McCormick, president of the New York City Bourse, a man of nation-wide renown in matters pertaining to promotion and trade extension work, most generously gave the committee many valuable ideas and referred to the committee's plans as being very practical and bound to succeed.

Those present at the meeting were: W. J. Woolley, Evansville, Ind., chairman; A. King Aitken, of the Trenton Potteries Co., Trenton, N. J., secretary; C. B. Nash, of the Standard Sanitary Mfg. Co., Pittsburgh; J. T. Sullivan, of the Thos. Maddock's Sons Co., Trenton, N. J.; M. R. Ebersole, of American Radiator Co., Chicago; H. Walberg, of the Standard Sanitary Mfg. Co., Pittsburgh; A. A. Du Mond and A. W. X. Spear, of the Plumbers' Trade Journal, New York City, and O. T. Carson, of "Domestic Engineering," Chicago.

## THE DEATH OF W. A. MYLER.

The Late W. A. Myler

William Albert Myler, secretary and treasurer of the Standard Sanitary Mfg. Co., of Pittsburgh, Pa., died at 10 o'clock, Thursday morning, July 25th, at his summer home, Patterson Heights, Beaver County, Pa., after several months' illness in his 67th year, as mentioned last week in this column. Mr. Myler was a son of John A. Myler, for eighteen years postmaster in the old Allegheny City. His mother was Mary Wineman Myler, the family being one of the oldest in the Pittsburgh district.

Mr. Myler received his early education in the public schools, and was connected with the wholesale dry goods firm of T. T. Myler & Co. from 1866 to 1875, associated also with Auday, Myler & Allison, wholesale dry goods, and with Myler Bros. in the flour and feed business in old Allegheny for two years. He then accepted a responsible position with the Standard Manufacturing Co. and later with E. L. Dawes established the Dawes & Myler Manufacturing Co. at New Brighton, Pa. In 1899, with the late James W. Arrott, Theodore Ahrens, of Louisville, Ky., and Francis J. Torrance, he organized the Standard Sanitary Manufacturing Co., and became one of its principal officials. Mr. Myler was a member and trustee of the First Baptist Church, Pittsburgh, and an honorary member of the Baptist Church of New Brighton, where he lived for a while. He was a member of the National Committee of the Confederated Supply Associations, chairman of the Executive Committee of the Homeopathic Hospital in Pittsburgh, president of the Beaver Valley Country Club, director of the Allegheny Trust Co., president of the New Brighton Y. M. C. A., a life member of the Pittsburgh Athletic Association, member of the Duquesne Club and of the Oakmont Country

Club, all in Pittsburgh. He also was prominently identified with Masonic circles and held a high place in the Odd Fellows. His widow; one brother, Theodore Myler, of Burton, Ohio; a sister, Mrs. Robert L. Henderson, of Pittsburgh; two daughters, Mrs. Frank J. Kier, of Pittsburgh, and Mrs. Franklin G. McIntosh, of Franklin, Pa., survive him. Mr. Myler gave liberally of his time and means to public movements and charities. Camp Myler for boys and girls, in connection with the First Baptist Church, was one of his favorite charities. In war work he acted as chairman for the Y. M. C. A. and other campaigns for the Beaver Valley district.

The funeral services were conducted at his country home on Saturday, July 27th, and further services were held at the First Baptist church, Schenley Farms. The honorary pallbearers were: Theodore Ahrens, of Louisville; Francis J. Torrance, James F. Conran, W. C. McKinney, M. C. Wilde, John C. Reed, Joseph Mayer and Harry Patterson, all of Pittsburgh; William E. Clow, of Chicago; David Jameson, Samuel Kier and Dr. T. Simpson, all of New Brighton; John B. Brittian, Lawrence Wood and F. N. Beegle, of Beaver Falls, and J. A. Atwood, of Beaver, Pa.

## P. F. CORCORAN CALLED BY DEATH.

P. Francis Corcoran, secretary of the Hoffman Specialty Co., of Chicago, died in his twenty-seventh year on Tuesday morning, July 30th, following an operation for appendicitis at the American Hospital, Irving Park Boulevard, Chicago. He was an able and highly esteemed executive and a conscientious and promising young business man. From the day of his first connection with the Hoffman concern, about five years ago, his rise had been steady and progressive. He was born in Massachusetts, and his boyhood was spent in the city of Waltham in that state. His mother, a sister and three brothers survive him. One of the latter recently sailed for France with the American Expeditionary Forces. Funeral services will be held in the East, the remains having been shipped to Boston, Mass.

The Late P. F. Corcoran

## SANITATION AND SAFETY CODE FOR FOUNDRIES.

A committee on sanitation, safety and fire prevention of the American Foundrymen's Association, at a recent meeting held at Rochester, N. Y., completed a safety and sanitation code to be put into practice in foundries identified with that association. This code will be presented at the next annual meeting of the association, to be held at Milwaukee, Wis., October 27th. The committee expects at that time to have completed also a fire prevention code.

The sanitation code, which will affect nearly 250,000 employes, directs that all foundries provide wash rooms, shower baths, metal lockers, drying rooms and drinking fountains. The fire prevention code rules that all foundries must be fireproof and equipped with sprinkler systems. Each foundry must have a fire department with periodical fire drills and inspection. Fire hose is to be used only to extinguish fires and not, as is the custom in many foundries, to wet down the castings.

## MIDSUMMER TOURNAMENT OF THE EASTERN TRADE GOLF ASSOCIATION.

The Eastern Trade Golf Association held its midsummer tournament on Thursday, July 25th, on the links of the Gedney Farm Country Club, Gedney Farms, N. J., with a good attendance in spite of a cloudy sky and threatening weather, thirty-five players being on hand to make the scheduled two rounds of the course.

The course is not at all difficult and was in excellent condition—witness the "under 100 nets" of some of the thirty-six handicappers. Thomas Chester, with a 68 net, took first prize in the handicap; a handsome cup donated by W. T. Gilmour. Mr. Gilmour came in second with 70. He received $20 in War Savings Stamps, presented by H. R. Smith. President R. B. Hunt took $10 in War Savings Stamps, donated by L. S. Rothwell, and F. W. Bratch finished fourth for the Red Cross medal.

A feature of the day's play was the Kicker's handicap. D. H. Roney finished on top with his regular handicap and received a box of golf balls, donated by M. E. Conran.

In the best ball foursome Chew and Chester were winners with 58 net, but Chester having taken first prize in the morning round, the two Red Cross medals were awarded to F. K. Chew and L. S. Rothwell.

An excellent dinner was served at the club house after the day's play, at which President Hunt awarded the prizes.

The matter of the suggested Inter-Association Tournament between the Eastern and Western Associations was discussed, and the members were enthusiastic over the project. Captain Garfield will report later on arrangements for the tournament. Probably Arcola will be selected for the Eastern course. The proposition is to have a certain number of selected players in each association play on two courses as near alike in length, as can be secured; one in the East and the other in the West. The prize will probably be $50 in cash or War Savings Stamps, to be divided among the players.

After dinner W. H. Staples and J. Barnum played off a handicap of their own. They came in in time for the last train, but the results were not made public.

The day's play follows:

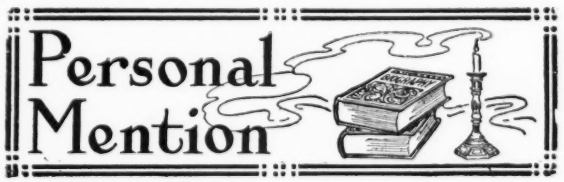
MORNING MEDAL PLAY

| | Gross | Handicap | Net |
|---|---|---|---|
| D. H. Roney | 94 | 18 | 76 |
| R. B. Hunt | 91 | 18 | 73 |
| S. J. Cutting | 118 | 25 | 93 |
| W. L. Johnson | 105 | 15 | 90 |
| L. S. Rothwell | 93 | 16 | 77 |
| R. E. Wall | 109 | 24 | 85 |
| F. K. Chew | 124 | 34 | 90 |
| Thos. Chester | 102 | 34 | 68 |
| P. J. Faherty | 150 | 36 | 114 |
| A. H. Ross | 116 | 24 | 92 |
| J. C. McDonald | 103 | 24 | 79 |
| B. W. Bennett | 109 | 17 | 92 |
| E. J. Hughes | 103 | 20 | 83 |
| C. S. Wood | 105 | 20 | 85 |
| J. B. Garfield | 87 | 0 | 87 |
| J. S. Weaver | 105 | 20 | 85 |
| L. Moore | 105 | 18 | 87 |
| F. J. Oliver | 96 | 15 | 81 |
| M. E. Conran | 100 | 24 | 76 |
| F. W. Broatch | 88 | 14 | 74 |
| W. T. Gilmour | 90 | 20 | 70 |
| L. G. Allen | 119 | 34 | 85 |
| O. E. Goldschmidt | 108 | 20 | 88 |
| H. R. Smith | 154 | 36 | 118 |

| | Gross | Handicap | Net |
|---|---|---|---|
| J. C. Faulkner | 125 | 36 | 89 |
| L. N. Heatherton | 118 | 30 | 88 |
| C. A. Miller | 131 | 36 | 95 |
| J. Barnum | 110 | 34 | 76 |
| W. H. Staples | 101 | 18 | 83 |
| J. J. Blackmore | 96 | 20 | 76 |
| J. G. Geoghegan | 105 | 22 | 83 |
| C. A. Geoghegan | 109 | 34 | 75 |
| W. R. Hughes | 135 | 36 | 99 |
| C. O. Lippy | 129 | 36 | 93 |
| C. G. Fundinger | 161 | 36 | 125 |

AFTERNOON FOURSOME

| | | | |
|---|---|---|---|
| Roney and Hunt | 86 | 18 | 68 |
| Moore and Oliver | 91 | 15 | 76 |
| Ross and McDonald | 98 | 24 | 74 |
| Bennett and Goldschmidt | 94 | 17 | 77 |
| Chew and Chester | 92 | 34 | 58 |
| Smith and Faherty | 120 | 36 | 84 |
| Wood and E. J. Hughes | 91 | 20 | 71 |
| Weaver and E. J. Hughes | 96 | 20 | 76 |
| Garfield and Wood | 80 | 0 | 80 |
| Conran and Gilmour | 94 | 20 | 74 |
| Broatch and Gilmour | 86 | 14 | 72 |
| Rothwell and Johnson | 77 | 15 | 62 |
| Wall and Cutting | 95 | 24 | 71 |
| Heatherton and Faulkner | 109 | 30 | 79 |
| J. G. Geoghegan and Miller | 100 | 22 | 78 |
| Blackmore and Staples | 100 | 18 | 82 |
| C. A. Geoghegan and Barnum | 101 | 34 | 67 |




C. B. Elliott, manager of the Kansas City office of the Wheeling Steel & Iron Co., of Wheeling, W. Va., spent part of his vacation in Chicago this week.

E. W. Sanborn, of Chicago, has just been appointed representative for J. B. Wise, Inc., of Watertown, N. Y., for Chicago and adjacent territory. Mr. Sanborn's office is at 332 South Michigan Avenue.

Isidor Weil, of Weil Bros., Chicago, has just returned from a two weeks' vacation at Mount Clemens, Mich. He brought back a fine coat of tan, and it is said that he now knows more about golf than he ever did before.

A. King Aitken, advertising manager of the Trenton Potteries Co., Trenton, N. J., is motoring over the famous "Ideal Tour." He has his golf clubs with him, and many of New England's scenic courses will no doubt receive his attention before his return.

J. B. Bernhard, manager of the boiler department of the Kanawha Mfg. Co., of Chicago, is in Texas on business at the present time. He will return in a week or ten days.

Charles P. Smith, representative of the Standard Sanitary Mfg. Co. in Montana, spent several days in Chicago this week, combining business and pleasure.

B. P. Carney, formerly connected with the Ernest Mehring Co., of Chicago, covering Iowa sales territory, is now serving Uncle Sam as an automobile inspector.

C. H. Dubois, Inter-Mountain representative of H. Mueller Mfg. Co., of Decatur, Ill., was seen in Helena, Mont, last week by a representative of "Domestic Engineering." He reported business good in his territory.

Cyrus Story, son of Joseph Story, well known in the Chicago heating trade and manager of the Chicago branch of the L. J. Mueller Furnace Co., of Milwaukee, has arrived "over there" with the American Expeditionary Forces. He is attached to an engineering unit of the army. He writes his father that he had a wonderful trip across the pond. "I think I saw every kind of fish that was ever put on the market, and I've seen so much water that I even hate to think of drinking this fluid any more." He stated further that the troops en route drilled twice a day in order to be prepared for submarine attacks. George Story, the oldest son who is with the artillery, is now on his way over—ready to join in the work of smashing the menace of autocracy.

## AMERICAN AND GERMAN FINANCES.

Pessimistic Americans who view with alarm our increasing national obligations may derive a great deal of comfort from a comparison of the financial condition of the United States contrasted with that of Germany.

The total resources of the United States are estimated at about $250,000,000,000; our annual earnings are estimated at about $50,000,000,000. Our national debt, including the third liberty loan, may be put around $12,000,000,000.

Before the war our Government was spending about $1,000,000,000 a year. When the war is ended, interest charges, less the interest collected from our loans to our allies, Government insurance expenses, and other necessary expenditures growing out of the war may conservatively be estimated at something like $1,000,000,000. We are confronted, therefore, when peace comes, with raising only a couple of billions a year revenue, a slight task for a nation of such tremendous wealth, capacity and resources.

The resources of Germany before the war were estimated to be $80,000,000,000. The annual expenditures then of the Imperial Government were about $800,000,000. Her debt now is $30,000,000,000, and her resources and man power have been severely impaired. After the war she is confronted with additional expenditures growing out of the war totaling some $4,000,000,000.

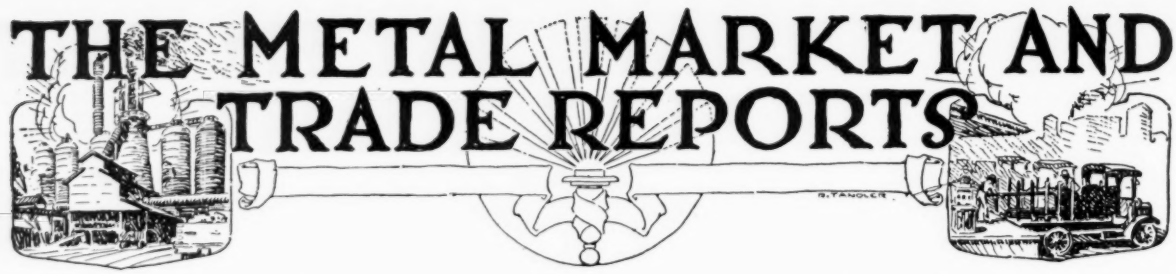
The interest of her war debt, even if the debt grows no larger, will be about $1,500,000,000. Although she is niggardly in her pensions to private soldiers and their families, $1,000,000,000 a year would hardly suffice to pay even small pensions to her injured and the families of her soldiers who have been killed. Her war debt must be paid some time and a sinking fund of 5 per cent would add $1,500,000,000 to her annual taxation. Here is a total increase of $4,000,000,000 all due to the war.

Of course both the United States and Germany may greatly increase their debts, but the increases will not change the relative situations.

The German Government has drained the German people of their gold, even their jewels and heirlooms, and yet the Imperial Bank of Germany now has but little over $500,000,000 of gold in its vaults. The United States has made no special effort to obtain gold, has made no call upon the people for the precious metal, and yet today has in its treasury vaults practically $2,500,000,000 of gold coin and bullion.

An official report to the German ministry of war is quoted as stating that the chemical industries have created more than 10,000 substitutes, including 7,000 substitute articles of food and 3,000 substitute materials for military purposes. Most of these substitutes and imitations, it was said, were invented or discovered during the year 1917, for at the beginning of that year the number of substitutes produced was given as only 2,000, including 1,200 articles of food. That in itself is almost proof positive that the Germans are very hard pressed for the ordinary necessities of life.

# THE METAL MARKET AND TRADE REPORTS



### Steel and Iron.

The steel situation is reaching the interesting position, which was to be expected to develop from the conditions that exist at present. The production and distribution of steel form problems that are hard to solve, but needs of the Government are recognized by consumers as paramount, and they accept without murmur the decisions of those in authority. Outsiders are thankful with but a small portion of the necessary steel to meet their needs and are taking orders subject to their ability to secure the necessary steel to fill them. The Director of Steel Supply estimates the requirements of the Government and the Allies to amount to 20,000,000 tons, and in order to produce that amount of steel every effort to tax the mills to the limit of production is being made. This estimate covers the requirements for the balance of 1918, and if unfortunate circumstances should arise the mills might easily fall short of the necessary outturn, which will, if produced, furnish a new record for steel production during any six months' period. In order to meet this situation extensive additions and equipment are being added to many of the steel plants. For instance, demand for tin plate is so heavy that the American Sheet and Tin Plate Co will build another mill at Gary, Ind., which will have a capacity of 2,500,000 base boxes per annum. The Carnegie Steel Co. is adding to the equipment of its Homestead works to provide the extra tonnage of plates required by the Government.

The situation in pig iron remains about the same, except that there is a closer control of distribution by the Government. Whatever chance foundry men, whose products are not essential to the war program, had to secure iron have grown so small as to have nearly reached the vanishing point. Only those orders may now be filled by the furnaces, which they know to be essential to national use, and these have been distinctly enumerated, so that producers have little discretion. Besides, no furnace knows what may be required of it from day to day, and some priority orders have been issued, which have thrown out former calculations so that none is in a position to accept new business with any assurance of delivery at a specified time. Prices are based upon the old standard grade of No. 2 foundry iron at $33, and basic iron at $32, at the furnace, and will be in operation until October 1st.

### Lead.

Demand for lead is accentuated by the short supply. Production is not keeping pace with the demand, and consequently the market is strong. There is some dealers' or speculative lead for sale in limited quantities, for which holders ask 8½ cents for nearby delivery, as against the official price established by the producers of 8.05 cents, New York, and 7.75 cents at East St. Louis.

### Copper.

Copper is not attracting much attention at present. Labor shortage is responsible for a falling off of production, but complaints because of delay in delivery are not many. The great bulk of copper consumed is for the Government, but the outsiders have been supplied for their needs as promptly as could be expected. The price as established until August 15th is 26 cents a pound, but sellers and buyers have some differences to settle arising from the premature announcement from Washington after July 1st that the price had been continued at 23½ cents. On the strength of this information some consumers contracted with the Government for finished goods based upon 23½ cent copper and are now asking that the loss be made good to them in some manner.

### Tin.

Consumers of tin are no longer disturbed about the supply of tin, and the week closed with but very little interest being shown in tin. Prices show an inclination to sag, although Straits tin is not offered at present, and Chinese is scarce and about on par with Banka. Arrivals at the Pacific Coast since June 27th were 5,035 tons, which added to the arrivals on the Atlantic Coast make a total of 5,810 tons. Spot tin in New York at the end of the week was quoted at from 95 to 96 cents, while Banka at the Coast held at 94½ cents.

### Spelter.

The market in prime western spelter is lifeless and neglected. At the end of the week spot and July were quoted at 8.55 cents bid, and 8.65 cents asked, New York.

### Other Metals.

Quotations on other metals in New York are as follows:

| | |
|---|---|
| Aluminum (in 100-pound lots) | 49 cents per lb. |
| Antimony, Chinese and Japanese | 18 cents per lb. |
| Solder No. 1 | 65 cents per lb. |

### New York Old Metal Market.

The following prices are current for old metals:

| | Buying. | Selling. |
|---|---|---|
| Copper, heavy | 24 cents | 25 cents |
| Copper, light | 20 to 21 cents | 23 cents |
| Brass, heavy | 14 to 14½ cents | 15¾ cents |
| Brass, light | 12 to 12½ cents | 13½ cents |
| Lead, heavy | 7 to 7¼ cents | 7¾ cents |
| Tea lead | 6½ to 6¾ cents | 7 cents |
| Zinc scrap | 6¼ to 6½ cents | 7½ cents |
| Cocks and faucets | 18½ to 19 cents | 20 cents |
| Mixed babbitt | 8 to 8¾ cents | 9½ cents |

### Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

| | Buying. | Selling. |
|---|---|---|
| Heavy yellow brass | 15 to 15½ cents | 16½ cents |
| Brass, light | 11 to 11½ cents | 13 cents |
| Brass, medium | 12¼ to 12¾ cents | 13¾ cents |
| Red brass | 21½ to 22 cents | 23 cents |
| Cocks and faucets | 17 to 18 cents | 19 cents |
| Copper, heavy | 23 to 23½ cents | 24½ cents |
| Copper, light | 20 to 20½ cents | 22 cents |
| Lead, heavy | 6¾ to 7 cents | 7½ cents |
| Tea lead | 5¾ to 6 cents | 6½ cents |
| Lead dross | 4¼ to 4½ cents | 5½ cents |
| Solder joints | 15¼ to 15¾ cents | 16½ cents |
| Old iron pipe | 23.75 | $24.25 |

### Plumbing and Heating Supplies.

No changes in prices of plumbing and heating goods were announced this week.

### The Pipe Market.

No changes have been announced in the pipe market during the last weeks.

Quotations on less than car lots of full weight steel pipe remain as follows:

| | Butt Weld. | | Lap Weld. | |
|---|---|---|---|---|
| | Blk. | Galv. | Blk. | Galv. |
| ⅛ to ⅜ inch | 38 | 10 | .... | .... |
| ½ inch | 42 | 26 | .... | .... |
| ¾ to 3 inch | 45 | 30 | .... | .... |
| 2 inch | .... | .... | 38 | 24 |
| 2½ to 6 inch | .... | .... | 41 | 27 |
| 7 to 12 inch | .... | .... | 38 | 23 |
| 12 to 14 inch | .... | .... | 28½ | .... |
| 15 inch | .... | .... | 26 | .... |

The quotations apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong steel pipe in less than car lots, quotations are as follows:

| | Extra Strong | | | | Double Extra Strong | | | |
|---|---|---|---|---|---|---|---|---|
| | Plain Ends Butt Weld | | Plain Ends Lap Weld | | Plain Ends Butt Weld | | Pl'n Ends Lap Weld | |
| | Blk. | Galv. | Blk. | Galv. | Blk. | Galv. | Blk. | Galv. |
| ⅛, ¼ and ⅜ inch | 29 | 9 | .... | .... | .... | .... | .... | .... |
| ½ inch | 34 | 14 | .... | .... | 25 | 5 | .... | .... |
| ¾ to 1½ inch | 38 | 18 | .... | .... | 28 | 8 | .... | .... |
| 2 to 2½ inch | 39 | 19 | .... | .... | 30 | 10 | .... | .... |
| 3 inch | 39 | 19 | .... | .... | .... | .... | .... | .... |
| 2 inch | .... | .... | 31 | 12 | .... | .... | 23 | 4 |
| 2½ to 4 inch | .... | .... | 34 | 15 | .... | .... | 25 | 6 |
| 4½ to 6 inch | .... | .... | 33 | 14 | .... | .... | 24 | 5 |
| 7 to 8 inch | .... | .... | 29 | 10 | .... | .... | 19 | List |
| 9 to 12 inch | .... | .... | 24 | 5 | .... | .... | .... | .... |

With threads only, the basing discount is 1 and 1½ points lower. With threads and coupling the basing discount is 3 points lower. The quotations apply to all quantities less than car lots.

Quotations on full weight genuine iron pipe, in less than car lots, are as follows:

| | Butt Weld. | | Lap Weld. | |
|---|---|---|---|---|
| | Blk. | Galv. | Blk. | Galv. |
| ⅛ and ¼ inch | 16 | +13 | .... | .... |
| ⅜ inch | 17 | +12 | .... | .... |
| ½ inch | 21 | 1 | .... | .... |
| ¾ and 1 inch | 26 | 8 | .... | .... |
| 1¼ inch | 26 | 8 | 11 | +6 |
| 1½ inch | 26 | 8 | 18 | 2 |
| 2 inch | .... | .... | 19 | 3 |
| 2½ to 6 inch | .... | .... | 21 | 6 |
| 7 to 12 inch | .... | .... | 18 | 3 |

These quotations are f. o. b. Pittsburgh, and apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong genuine wrought iron pipe, with plain ends and in less than car lots, the quotations are as follows:

| | Extra Strong | | | | Double Extra Strong | | | |
|---|---|---|---|---|---|---|---|---|
| | Butt Weld | | Lap Weld | | Butt Weld | | Lap Weld | |
| | Blk. | Galv. | Blk. | Galv. | Blk. | Galv. | Blk. | Galv. |
| ⅛ to ⅜ inch | 11 | +9 | .... | .... | .... | .... | .... | .... |
| ½ inch | 16 | +4 | .... | .... | 3 | +17 | .... | .... |
| ¾ and 1 inch | 22 | 2 | .... | .... | 8 | +12 | .... | .... |
| 1¼ inch | 22 | 2 | 8 | +12 | 8 | +12 | .... | .... |
| 1½ inch | 22 | 2 | 14 | +6 | 8 | +12 | 3 | +16 |
| 2 inch | .... | .... | 16 | +4 | .... | .... | 3 | +16 |
| 2½ to 4 inch | .... | .... | 18 | +2 | .... | .... | 5 | +14 |
| 4½ to 6 inch | .... | .... | 17 | +3 | .... | .... | .... | .... |
| 7 to 8 inch | .... | .... | 9 | +11 | .... | .... | .... | .... |
| 9 to 12 inch | .... | .... | 4 | +16 | .... | .... | .... | .... |

These retail prices are f. o. b. Pittsburgh, and apply to all quantities except in car lots. With threads only, the basing discount is 1½ points lower. With threads and couplings, the basing discount is 3 points lower.

To ascertain the price in any city, deduct the proper freight rate from Pittsburgh to that city. To illustrate: ¾ to 3-inch steel pipe, black, is 45 per cent off, Pittsburgh. The freight to Chicago is 39 cents, or it would be 45 per cent minus .039, or .411 per cent Chicago for 10 cents a hundred freight you should deduct one point.

### BRITISH BAN ON STAINLESS STEEL

No more stainless steel can be produced in Great Britain, where the discovery of this important steel alloy originated. A recent order of the British Ministry of Munitions reads as follows:

"In view of the difficulties in getting supplies of ferro-chrome I am directed to inform you that the use of the same in connection with the manufacture of stainless steel for cutlery purposes is prohibited. Ferro-chrome must only be used in connection with high-speed, crucible carbon steel and alloy steel, and in the case of the latter only where a priority certificate or other permit number has been obtained which will warrant the manufacture of the steel in question."

As will be seen, the prohibition relates only to stainless steel for the cutlery trade, and therefore, such steel can still be made for other uses provided that these are connected with the production of munitions of war. That such uses exist is not generally known, but it appears that the material has proved extremely valuable for various engineering purposes, says an English authority. Apart from cutlery, steel rendered stainless or rustless by the employment of chromium in its composition is likely to become a big factor in the engineering industry of the future.

### BERLIN HAS STEEL PLANT PLANS.

"It is understood that Germany, through an elaborate system of espionage, has blue prints of practically every steel plant in the United States," says the Boston News Bureau.

"This was accomplished through two concerns operating in this country, but which have passed into the hands of the Government through the Alien Property Custodian as enemy-owned and controlled.

"Of these companies one specialized in smoke stacks and the other in coke ovens. The method adopted was to require complete blue prints prior to installation of equipment at the steel plants and these, or copies were immediately forwarded to Berlin.

"More than 200 alien-owned properties with assets running between $250,000,000 and $300,000,000 have been seized by the Federal Government. Examination of the affairs of these concerns revealed the surprising condition that less than a dozen were not operating at a profit."

### ONE MORE GERMAN DEVICE.

English publications are quoting a circular published last March by the German Ministry of Foreign Affairs which reveals one method by which the Teutons hope to regain some of the trade lost because of the war.

"It will be wise after the war," says this official German circular, "for German merchants who have interests abroad to employ agents in foreign countries who can pass themselves off as French or English. German agents will probably for some time after the war have difficulty in doing business, not only with our present enemies, but even in neutral countries. Personal prejudice will undoubtedly exist against Germans, and will render the task of commercial representatives difficult. Hence commercial transactions will be much facilitated if our merchants employ agents who can pass—preferrably for French or English, or for Dutchmen, Americans or Spaniards."

Remember to buy War Savings Stamps.

# AMONG THE PLUMBING AND HEATING CONTRACTORS

## Illinois

**Chicago and Vicinity.**

A housing census has been inaugurated in Chicago by the Home Registration Service Committee of the State Council of Defense Committee at the request of the Department of Labor. It will be a census of available facilities in virtually one-third of Chicago—the district bounded by Thirty-first Street on the North, Halsted Street on the West, the city limits on the South and Lake Michigan on the East. This is the first step in working out an adequate housing program for the influx of war labor, particularly in and around the plants of South Chicago, Pullman and Gary. The State Council of Defense will handle the housing question for the entire state. The council has appointed a number of committees to direct the census. Charles B. Ball, chief inspector of the Bureau of Sanitation of Chicago, has been named on one of these committees. Doubtless the census will furnish interesting data as there are 169,300 separate buildings in the area described. Many of these houses are certainly in need of better plumbing and heating facilities, as well as other improvements, before they can be rendered fit for tenants.

The Board of Examiners of Plumbers have recently issued master's certificates to the following applicants, who have successfully passed the required examination: John E. Henneberry, 4923 West End Avenue; Edward A. Van Rhyn, 2447 North Francisco Avenue, and J. M. Kalish, 715 South Paulina Avenue. At the board's rooms in the City Hall, it was announced that the next examination for master and journeyman plumbers would be held throughout the state on August 20th under the auspices of the Department of Registration and Education, Springfield. The boards of examiners of plumbers in the leading cities will conduct the examinations as heretofore, holding the examinations simultaneously in the various cities in the state, where local boards exist, is a new departure.

Thomas J. Claffey, assistant chief of the Bureau of Sanitation, left the city on July 28th on a two weeks' vacation.

The M. J. Corboy Co., of 178 West Lake Street, has been awarded the contract to install the plumbing in a factory, to be erected at a cost of $300,000, at Lake Street and Albany Avenue.

The Philips-Getschow Co., of 130 West Kinzie Street, has been awarded the heating contract in a silk factory, to be erected at a cost of $200,000 at 1935-45 North Fairfield Avenue. The P. Nacey Co., of 927 South State Street, will install the plumbing.

The Luder Plumbing Co., of 1310 Sedgwick Street, will install the plumbing in a motion picture theatre, store and loft building to be constructed at 1548-56 Devon Avenue.

Sam Kersten, of 554 West Jackson Boulevard, has secured the contract to install plumbing and heating systems in a factory, to be erected at a cost of $40,000 at 363-369 West Ontario Street.

P. K. Clayton of 1949 North Western Avenue, has been awarded the contract to install the plumbing system in a department store, to be built at a cost of $18,000, at 2050-52 West Eighteenth Street.

William Maloney, of 5434 South Halsted Street, has been awarded the contract to install the heating system in an addition to a furniture store, to be erected at a cost of $10,000, at 4709 South Ashland Avenue.

Wm. Olson, of 11 West Kinzie Street, will install the plumbing system in a two-family residence, to be erected at a cost of $8,500, at 5624-26 Byron Street.

Fred Grosch, of 2751 Armitage Avenue, has been awarded the contract to install the plumbing in a new residence at 2848 North Parkside Avenue.

N. Keller, of 4650 Calumet Avenue, will install the plumbing in four apartment buildings to be erected at a cost of $7,000 each at 4830-38 Augusta Street.

William S. Verity Sons, of 810 West Lake Street, have been awarded the contract to install the plumbing in a boys' club house, to be erected at a cost of $60,000, at Twenty-eighth and Ridgeway Avenue.

J. W. Thomson, of 729 West Sixty-ninth Street, will install the heating system in a two-family residence, which is to be erected at a cost of $7,000, at 8135 Justine Street. D. D. Kinsella, of 7309 Vincennes Avenue, will install the plumbing system.

The South Shore Plumbing Co., of 7448 Stony Island Avenue, has secured the contract to install plumbing systems in three new bungalows.

C. W. Johnson, of 644 Washington Street, will install the heating system in a loft building to be remodeled at a cost of $70,000 at 210-12 West Monroe Street. The plumbing contract was awarded to B. J. Farwell, of 410 Sherman Street.

## Minnesota

**St. Paul and Vicinity.**

M. J. O'Neil, of St. Paul, was the lowest bidder on the installation of heating and plumbing in the proposed state reformatory for women, which is to be erected at Shakopee. Early awards of contracts are expected.

Recent permits include one to John E. Holt for the installation of eight closets, four bath tubs and ten lavatories at the House of the Good Shepherd, Lafond and Milton Streets. The contract amounts to $2,200.

L. H. Peter will install the plumbing in the two-story brick factory building of the United States Bedding Co., at Arundel and Minnehaha Streets.

B. E. Cardinal has taken out permits for plumbing work as follows: On the two-story frame dwelling of Mrs. Condon, at 677 South Smith Avenue; new frame dwelling of A. H. Vadnas, 611 Lexington Avenue, and Mr. Shimull's residence at Oxford Street and Ashland Avenue.

Charles Lundstrom was given a permit for plumbing work on William Marquardt's residence, at 845 East Carbon Street.

O. W. Barrett will install the plumbing in H. Humland's residence, at 884 Fuller Avenue.

Dan Van Core will install the plumbing in the new residence at 1447 James Street.

L. Sudheimer has secured the contract for the plumbing on a three-story factory building of Brown & Bigelow, at University and Hamline Avenues, the valuation being $2,500, according to the record of Plumbing Inspector C. A. Peterson.

George Anderson will do the plumbing work on the two-story frame dwelling of G. W. Davidson, Maryland Street and Payne Avenue.

Ed Snyker will do the plumbing work on the frame house of James Borte, Fairmount and Saratoga Avenue.

William H. Giebler has obtained a permit for plumbing work on the dwelling which T. D. McAnulty is erecting at 833 Linwood Place.

Charles Lundstrom will install modern plumbing in two new residences.

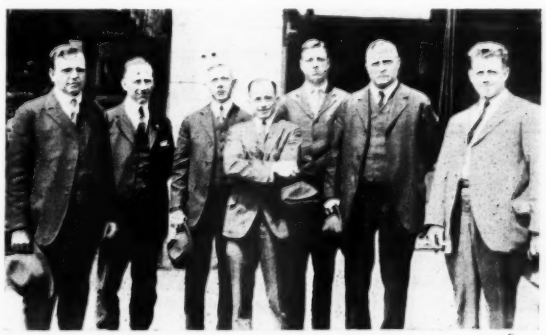
O. Skoog will install modern plumbing in a new residence at Fairmount Avenue and Oxford Street.

C. F. Hochmuth will do the plumbing on the two-story dwelling of Mrs. Barnes, at 260 Midway Avenue, and on the dwelling of Mrs. J. Perham, at 113 Belvidere Street.

# Washington

### Seattle and Vicinity.

The master plumbers of Seattle have an exceptionally wide-awake association, working unceasingly for the betterment of sanitary conditions in this city as well as for the up-lift of the plumbing business. Headed by P. J. Lavan, president of the association, all the members are enthusiastic association workers, each one being a personal booster committee in himself. They are proud of the fact that not one of the members of the association is in debt and that no one will take a contract without a reasonable profit. Needless to say, there is absolutely no friction in the association. Every member takes a turn on the business committee, which meets daily, and any misunderstanding is settled before sundown. Every Tuesday noon they have a "Get Together" luncheon and



Some of the Members of the Master Plumbers' Association of Seattle, Wash. From Left to Right They Are: D. H. King, J. A. Scherer, President P. J. Lavan, Mr. Ward, H. G. Cook, F. E. Rautman and H. W. Cheever.—From "Domestic Engineering" Photo.

a representative of "Domestic Engineering" who was recently a guest at one of these can vouch for the fact that the Seattle organization is one big bundle of live wires.

Washington Sheet Metal Works, Seattle, has received the contract for installing the heating plant in the new Carnegie Library at Port Angeles.

### Tacoma and Vicinity.

F. C. Grosser & Co., have secured the contract for the installation of modern plumbing in the $250,000 mill, now being erected for the Sperry Flour Mill Co.

A. B. Gehri & Co. have the contract to install modern plumbing in the William Winlock Miller high school, now being built at Olympia. This firm is also installing plumbing and heating systems in the Hillsbury Apartment Building and in fifty cottages, which are being built to accommodate ship builders in the local ship yards.

Some of the Members of Domestic Engineering Association of Tacoma, Wash. The Gentlemen in the Top Row Are: A. M. Goddard, Secretary and Treasurer of Both State and Local Association; C. A. Richardson; F. C. Grosser, President of Local Association; James Griggs, President of State Association, and M. M. Mattison. Those in Front Row Are: Mr. Bergh, of Appling-Griggs Co.; G. A. Weber, Ed. Dube, Ben Olson and A. B. Gehri.—From "Domestic Engineering" Photo.

The Domestic Engineering Association of Tacoma, will hold its annunal outing and fishing party on Friday, Saturday and Sunday, August 9th, 10th and 11th, at Lake Keechelus, at the summit of the Cascade Mountains. The committee on arrangements for the trip is working overtime trying to figure out how all the fish can be brought back, as the railroads at this time are congested with the transportation of shipbuilding material.

G. A. Weber, of 1539 Broadway, has secured the contract for the installation of modern plumbing in C. O. Lynn's new undertaking establishment in this city.

Oscar Lemon, of 950 South Sheridan Avenue, will install modern plumbing in fifteen cottages now being erected to help in meeting the demand for homes for ship builders.

Appling-Griggs Co. has been awarded the contract for the installation of plumbing and heating systems in the new State School for Girls, at Grand Mound.

William B. Coffee Plumbing Co. recently sold its property at 1012 South A Street, where it had been located for the past twenty-eight years, and purchased a four-story building at 722 Pacific Avenue, where it has ample facilities for its ever-growing business.

Ed Dube Plumbing Co., of 1552 Market Street, has secured the contract for the installation of modern plumbing in the first unit of the hotel now being constructed by the Todd Shipbuilding Construction Co., for its employes. This hotel will be constructed in two units, and it will

be built under United States Government supervision. Each unit calls for the installation of 460 plumbing fixtures, 920 fixtures in all. The hotel complete will have 648 rooms. F. H. Bellingham will install the plumbing in the second unit. The Dube company will also install the plumbing in the Shipbuilding Co.'s office building, and Mr. Bellingham will install the plumbing in the company's emergency hospital.

The town of Cle Elum was practically destroyed by fire on June 26th, when twenty-four blocks of the business and residence section were destroyed. More than 1,500 residents were rendered homeless and the loss is estimated at $1,000,000. About forty stores and office buildings were burned and a large number of homes. Tentative plans for rebuilding the city are under way.

# California

### San Francisco and Vicinity.

In spite of the Government restrictions as to building materials, bids are still being received and contracts let. Quite a lot of repair work is now underway during the summer months, the owners taking advantage of the fact that many residents of the city are out of town and are proceeding with more or less extensive alterations. Work has commenced on school building alterations, so that they may be ready for occupancy when the new term opens; and the same is true of department stores, office buildings and banks. As a result many of the shops have been exceptionally busy during the past weeks with this smaller class of work.

Raphael Weil & Co., department store proprietors, at the corner of Grant Avenue and Post Street, have begun alterations and repairs on the Hastings' Building, which is to be occupied as an addition. The estimated cost of the alterations, including plumbing and heating, is $75,000.

Wm. F. Wilson has been awarded the plumbing contract for the new four-story and basement building to be erected on Spear and Harrison Streets.

The C. Peterson Co. has been awarded a $5,245 plumbing contract on the five-story addition to the Mills Building on the north side of Bush Street.

The general contract for the three-story Henry & Meyer Building has been let to W. D. Henderson for $24,915. Contracts for the plumbing and heating will soon be awarded.

Architect Edwin J. Symmes, Pacific Building, has completed plans for and is taking figures for the construction of a one-story frame and stucco church to be erected in Suisun for the Congregational Church at an estimated cost of $7,000. Separate bids will be taken for the heating.

The Bethelem Steel Co. has awarded the contract for the construction of a two and one-half story frame office building to be erected at Twentieth and Illinois Streets at an estimated cost of $17,000. Bids are now being taken for the heating and for cafeteria fixtures.

### Other Cities in the State.

Reed & Corlett, Oakland Bank Building, Oakland, have completed plans for the construction of a three-story brick apartment house, to contain twenty-five two-room apartments, and to be erected at Georgia and Sutter Streets, Vallejo, at an estimated cost of $40,000. Separate bids are being received for heating and plumbing.

Richardson & Tyler, 747 South Grand Avenue, Pasadena, have been awarded the contract for the plumbing for the new grammar school building to be erected in Azusa. The contract amounts to $3,155.

The First National Bank of Hanford is to be altered at a cost of $40,000. Work is to begin at once.

Alfred Rea and Chas. E. Gartsang, 720 Black Building, Los Angeles, are taking figures for the construction of a two-story and basement brick building. It will be erected on North Workman Street near Twenty-sixth Avenue. The estimated cost of construction is $45,000.

Miller Hayes Co., of Stockton, have been awarded the plumbing contract by the Stockton Board of Education, for a one and one-half-story, seven-room brick primary school to be erected in the Elm Tract. The Miller Hayes bid amounted to $3,000.

# Montana

J. W. Kennedy, of Missoula, has been awarded the contract to install the heating system in the new Christian Church in that city. He also has the contract to install plumbing and heating systems in the Science Building, now being erected at the University of Montana.

**The Plumbing and Heating Establishment of Berryman Bros., at Billings, Mont. The Gentlemen in the Picture are Elwood Kuschke, of Berryman Bros., at the left, and A. M. Grant at the right. Mr. Grant is Eastern Montana Representative of the N. O. Nelson Mfg. Co., at St. Louis, Mo.—From "Domestic Engineering" Photo.**

The John Sturrock Plumbing & Heating Co., of Helena, has recently secured several large contracts, among them the contracts for the installation of plumbing and heating in the new East Helena High school building, the new Y. W. C. A. building and the new addition to the State capitol building at Helena.

# Texas

A. D. T. Chandler, plumbing inspector and secretary of the Board of Plumbing Examiners at Fort Worth, Texas, last week received an application for a master plumber's license which showed so much originality that he thought it good enough for "Domestic Engineering" and consequently sent it to us. The application in full is as follows:

'Dear Sir Mr. Shangler. I am a sitson of fort worth and kinly ask you would alow me to do pluming work for the clored only. I am clored and i would would like to do there work. i will not go under plumers price are charge any more. Yours truley, J— M—."

# Oklahoma

**Oklahoma City and Vicinity.**

The Capitol Plumbing Co., of 307 North Hudson Street, Oklahoma City, has been awarded the contract for the installation of plumbing and gas lighting systems in the new bungalow of F. E. Clothier, at 1300 Linwood Boulevard, and the contract for the plumbing in the new residence of J. E. Dodson, at 1935 West Eleventh Street.

B. Z. Hutchinson, of 17 South Robinson Street, Oklahoma City, has secured the contract to install the plumbing and heating systems in the new high school building at Stillwater, which is to be constructed at a cost of $75,000.

J. D. Manny, of 224 West Second Street, is busy with repair work, having a number of remodeling contracts on his books.

Fischer & Son, of 116 North Peters Street, Norman, have been awarded several large contracts, among them being the installation of the plumbing in the state hospital for the insane in the east part of the city. This building will cost $100,000, and the plumbing in the state library building in the western part of the city, an $850,000 structure. The heating contract on the latter building went to the Corey Heating Co.

Fleharty & Sons, of 116 West Main Street, Norman, are installing the plumbing system in the new $7,000 residence for J. D. Pierson.

D. N. McGowan, of 104 South Broadway, Edmond, is installing plumbing systems in five new cottages in the Capitol View Addition, which will be erected at a total cost of $25,000.

# Tennessee

**Memphis.**

Even during the hot days of summer the Memphis Master Plumbers' Association is holding monthly meetings at its headquarters on Madison Avenue, and this with a good attendance. James H. Evans, of the local body, was appointed state secretary by President Hull recently.

Prospects for building in Memphis are picking up a little. The recent rains were very helpful to this section, and a fine harvest is in prospect. City and suburban business, and especially in neighboring towns in the Delta and Arkansas, promises to be good.

The McBee Engine & Implement Co. is featuring country plumbing systems at its store on Front Row, Memphis.

The Kaustine Co., Bellevue Avenue, Memphis, is doing publicity work for sanitary plumbing and private water supply systems.

James Lowe, of Memphis, is doing the plumbing on the Sacred Heart Academy addition at Helena, Ark., and the Hughes Heating Co., of Memphis, is doing the heating. The latter company also has the heating contract on the Royal Building, a large office and business structure, on Madison Avenue, Memphis.

Pritchard Bros., of 433 Madison Avenue, have recently secured the following contracts: Remodeling the plumbing in the bank and office building of the Union and Planters Bank & Trust Co.; installing plumbing in the Bosworth Bag Co.'s new factory building; remodeling the plumbing in the Boyd Building, and installing new plumbing in David Dermon's new garage.

**Chattanooga and Vincinity.**

G. H. Allen, of Chattanooga, has been awarded the contract for the installation of the plumbing in the Mountain City Mills; also the contract to install plumbing in seven residences and bungalows in and about the city.

The Houston Plumbing Co., of Chattanooga, has the contract to install the plumbing in the residences of S. J. Klaus, W. S. Williams, W. L. Lawton and Edward Turner, all in Chattanooga.

Pechman & Pechman, of 609 Cherry Street, have recently been awarded the contract for the installation of plumbing and heating systems in a number of buildings at Camp Shelby, Miss.; also the plumbing in a college at Chattanooga and in a number of residences.

# Ohio

**Cincinnati and Vicinity.**

Several master plumbers of Cincinnati and Cleveland held a meeting in the former city on Thursday afternoon, July 25th, discussing trade conditions and how to improve them by co-operation. Following the meeting the party, including the families of some of the master plumbers, visited the zoo and Coney Island, taking their dinner at the latter place. Among those in attendance were: J. J. Vogelpohl, Clifford T. Schlemmer, Thos. J. Dyer, E. B. Kline, E. J. Nolan, R. H. Cluxton, William Attlessey, J. B. Laumann, Thomas Canary, A. J. Burke, William J. Doud, Ed H. Morgan, all of Cincinnati; and E. B. Benhoff and Ray Hillenbrand, both of Cleveland.

R. E. Kramig Co., of Eighth Sreet and Eggleston Avenue, have recently secured contracts for the installation of pipe and boiler coverings on the heating systems in the McKinley, Windsor and Williams Avenue Schools, the Leyman residence, the Palace Theater and the Crown Overall Co.'s new building. The firm has just completed similar work in the Engineering Building of Cincinnati University, the Charles Boldt Paper Mills and in the East Side High School.

**The Plumbing and Heating Establishment of Behm & Daniels, in Toledo, Ohio.**

Behm & Daniels, of 110-114 Fourteenth Street, Toledo, whose attractive plumbing and heating establishment is shown herewith, have just secured the contract for the installation of modern plumbing in the Gas House on Erie Street, for the Toledo Railway & Light Co.

## America's Answer to the U-Boat Question

# Ships and Ships and Still More Ships

The accompanying picture gives a general view of the great shipbuilding plant at Hog Island where merchant ships to transport our armies and food supplies are being rushed to completion.

The launching of nearly one hundred ships on our Independence Day—the greatest ship-launching day in history—was the splash, according to Chairman Hurley, of the Shipping Board, that was heard round the world. But the promise for the future is still bigger.

**These Buildings Are Equipped** [illegible] **Sanitary** [illegible]

# Every Detail Must Be Carefully Finished Product Sp[illegible]

From the humblest rivet heater to the most [illegible] ma must perform his particular duty to the best o[illegible]bility storm-tossed vessel where the failure of even [illegible]ll de crew.

In the manufacture of Plumbers' Sanitary [illegible]Goo It pays in the end to be sure that every artic[illegible]ng t have accomplished by employing expert work[illegible]nd

Style "P" No. 1242 furnished regular with 2¾" 14 Gauge, Wrought P. O. Plog, 6" Slip Joint, Cast Nuts, Heavy 3" .017 Flange.

12" Center Inlet to end of wall tube.

# THE SENECA [illegible]

is the very latest in sanitary lavatory traps. Made o[illegible]eavy not catch lint or hair, as a cast trap does.

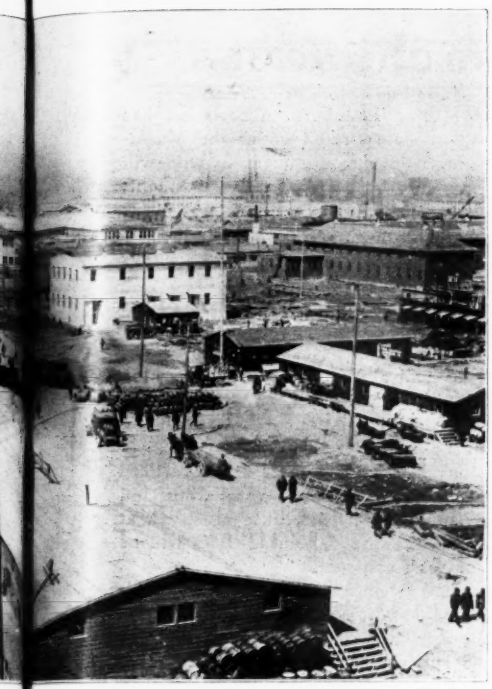
All tubing 1¼" diameter, No. 18 gauge. In[illegible]¼".

The plumber who stays at home can help to win [illegible]ar by economy to install WISECO Brass Products and [illegible]ped o

In ordering Lavatory Traps from your jobber, s[illegible]he "

# J.B. WISE, Inc

***Manufacturers of Plu[illegible] Sa***



*Copyrighted by Underwood & Underwood New York*

# Mr. Chas. M. Schwab

**Director-General of the**

# Emergency Fleet Corporation

**in his speech on July 4th at San Francisco said in part**

"Every time we launch a cargo or troop-ship or tanker we add to the certainty that German submarines cannot win this war. Already we have the U-boats on the run, and if we keep up the pace we will have them beaten by next year.

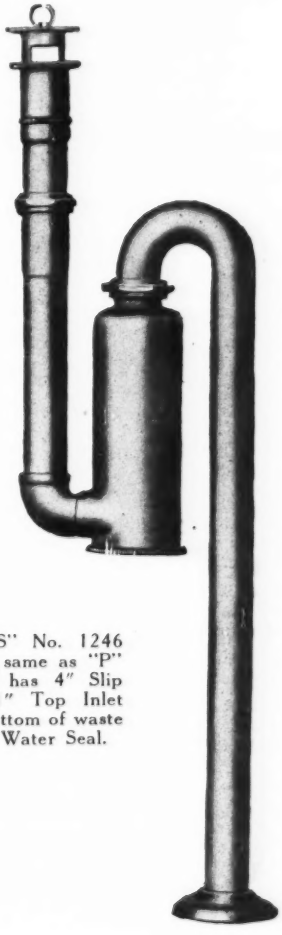
"In 1915 all the shipyards in America turned out 215,602 dead-weight tons of shipping. The next year our output jumped to 520,847 tons. In 1917 the hot pace continued until we very nearly doubled the output of the previous year, completing a total of 901,223 tons. I am confident now that if we pull together and every man stays on the job, we will produce more than 3,000,000 dead-weight tons in 1918—the greatest output of any nation in the world in a single year."


**d ghout With WISECO Plumbers' ary ss Goods**

# fy Worked Out So the ills Perfection

ost machinist employed in building the ship, every man t of ility—for there must not be any defective part in a en ll detail is liable to result in the loss of the ship and her

y Goods, care and precision has always been our policy. ic ng the factory is absolutely free from defects. This we or nd by using only the best materials of accurate gauges.



# AVATORY TRAP

of eavy drawn brass, perfectly smooth inside and out, and will

l 4". Ground seat on waste.

vin r by helping to conserve the resources of the nation. It is d ed of service, durability and universal satisfaction.

, s e "Seneca."

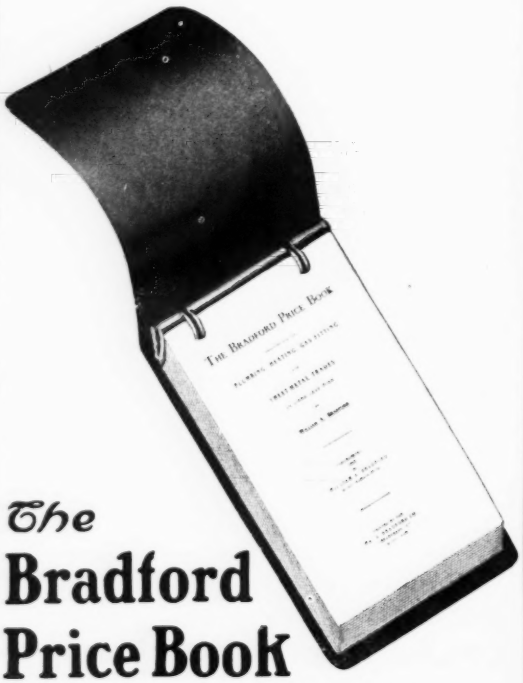
Style "S" No. 1246 Furnished same as "P" trap only has 4" Slip Joint. 21" Top Inlet bend to bottom of waste tube. 7" Water Seal.

c, og Watertown, N.Y.

*Pl Sanitary Brass Goods*

# Your Profits Assured

It is a simple and easy matter to know **without figuring** that the price you charge for each article you sell or furnish will give you the right margin of profit. You can tell instantly by referring to



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**Wm. A. Bradford**
**Department C**
**7 Maple St., Quincy, Mass.**


# Massachusetts

The New Bedford Master Plumbers' Association has taken steps toward being incorporated under the Massachusetts laws. The officers of the organization who will act as incorporators are: Herbert C. Reynolds, president; Joseph P. Reilly, vice-president; John D. Elliott, treasurer; Wilfred L. Bacon, financial secretary and clerk, and L. W. Morton, Augustus Smith, Eben P. Hirst, W. P. Bailey and Charles A. Maxfield, directors.

Replies already in the hands of State Secretary James H. Trow, of Salem, indicate a good attendance at the midsummer meeting of the state association of master plumbers, which will be held at Webster, on August 21st.

At a special town meeting at Grafton, an appropriation of $4,500 was made for the installation of new plumbing in the town school house at Fisherville.

The state commission on mental diseases has advertised for bids for the construction, heating, ventilating and plumbing in two new buildings at the State Hospital, at Northampton, to be used as nurses' homes. Bids will be received separately for each contract.

Plans for a new heating system for the high school building at Gloucester, bids for which were taken some time ago, have been abandoned for the present. The bids were all rejected. The aldermanic committee, which had the matter in charge, reported that the state inspectors had found that it would not be feasible to install boilers as proposed, unless a new system of ventilation was provided. It was felt that the city could not undertake the expense of all this work at the present time.

George R. Estabrook, of Springfield, has the contract for making extensive changes in the heating and sprinkler systems in the Baker Building, at Dwight and Bridge Streets, Springfield, which is being remodeled.

C. F. McDonald, of Athol, will install plumbing and heating systems in 14 new houses for the Athol Homes Corporation. Mr. McDonald will also remodel the plumbing in Lee Bros.' shoe factory. The latter contract calls for the installation of over one hundred fixtures.

**Albert Shields and George Fleury in Front of Their Plumbing Establishment at North Adams, Mass.**

Albert Shields and George Fleury have formed a partnership under the name of Shields & Fleury and have purchased the plumbing and heating business of Arthur C. Deming, at 41 Summer Street, North Adams. Mr. Shields learned the trade in L. A. Weston's plumbing establishment, and Mr. Fleury in A. C. Deming's establishment, both in North Adams.

Lieut. John J. Galvin, formerly connected with the plumbing business of J. B. Kennedy, Greenfield, was recently killed in action in France.

# Connecticut

W. J. Wade, of Bridgeport, has the contract for plumbing in a dwelling house to be erected on Exeter Street in that city for Joseph Addo.

Sub-contracts for plumbing, heating and similar work are to be let soon for a business block on North Washington Street, Bridgeport, for L. Paolini.

C. W. Carlson, of Bridgeport, has contracts for plumbing and hot water heating in a dwelling house on East Eaton Street, Bridgeport, for Edward Green, work on which will be started soon.

Libby & Blinn, of Hartford, has the contract for installing the heating system in the Bacon block on Main and Church Streets, Middletown, which is being extensively altered.

The New England Hotel Co. is planning the erection of a two-million dollar hotel at Bridgeport. The hotel will have 400 guest rooms, each with private bath and shower. One floor will be entirely given over to a men's club, and another will be occupied by the New England Women's Club. Each will have swimming pools, gymnasiums and baths and other modern appurtenances, according to the announcement. Plans have not yet been completed.

# Vermont

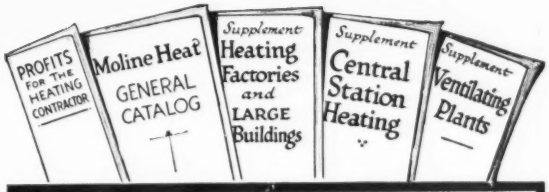
Plans have been prepared under the direction of Plumbing Inspector D. E. Harran, of Burlington, for a public comfort station to be located in the Stannard Memorial Building in the center of the city. A committee was named recently, headed by Alderman Luck, to investigate the report on the cost of such a station and at the request of this committee Mr. Harran had plans prepared and obtained approximate estimates of the cost. This material now has been placed in the hands of the committee, which is expected to take some definite action soon. The need of a public comfort station in Burlington long has been recognized, and it is believed that such a station in the Stannard Building would fill the need.

# Maine

Plans are under way in Portland to have all of the large heating plants systematically inspected with a view to putting them in first-class order so as to reduce, as far as possible, coal consumption. The inspections, made at the request of the government officials, will be in charge of competent engineers, many of whom will give their services. It is believed that much waste heat can be saved through suggestions for slight changes. Utilization of exhaust steam is one feature that is being considered. In many cases, it is believed, this can be made a valuable asset.

Arthur Moulton, oldest son of R. H. Moulton, of Portland, is now at the Franklin Institute, Boston, taking a course on gas engines, preparatory to enlisting in the United States service as a mechanic in the Aviation Corps.

The following plumbing concerns have recently lost one or more journeymen by their entry into the service of the country: Willey & Calhoun, Scribner & Iverson, Madsen & Allen, and Standard Plumbing Co., all of Portland.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**Moline Illinois**

## BUSINESS THOUGHTS

No. 8

There is a quality in **service** that, working on standardized remuneration, gives more than is usually got for the price.

At first thought it would look as if that type of service was a losing game.

But,—in practice we know that the man who takes a little less profit by giving a little more service **wins in the long run.**

He unerringly gains a **continuous** profit through **goodwill** he generates.

Goods sold for a big **first** profit seldom yield continuous profit; yet constant buying through constant patronage is the secret of success. That makes **goodwill** and goodwill is often worth far more than tangible assets.

Quality put into goods manufactured, and goods sold, is **service,** giving more than is usually got for the price.

It's the policy that makes for the **continuous profit**—it's the policy that makes a customer and then makes that customer **constant.**

Woodward-Wanger products are designed to gain the plumbers good-will for us, and the consumers' good-will for the plumber. Our success—their success—has been as consistent as it has been gratifying.

Quality-policy pays.

May we send you our Monthly Magazine "Better Business" devoted to plumbers and plumbers business problems? There is no charge for it.

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### Russell's Perfect Automatic Air Valve

has a sealed metal float in the shell of the valve, which is flexible top and bottom and partially filled under vacuum with a sensitive fluid.

When cold the valve is open, freely venting the radiator of accumulated air. When steam reaches the valve, the vaporizing of the fluid expands the expansion float and closes the valve against loss of steam.

The float is lighter than water and will close tight should water enter the radiator.

Ever since this valve was put on the market by us in 1890, it has given entire satisfaction under every known heating condition.

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**CRANE CO.**

is prepared to furnish all the piping features of the modern building, home, apartment, hotel, office building, hospital, church, public institutions and all other buildings.

**CRANE CO.**

Works—Chicago and Bridgeport


# Pennsylvania

**Pittsburgh and Vicinity.**

Manufacturers are prepared to meet a large demand by the Government housing experts in the near future, when materials for the big barracks and other quarters for workmen at the Neville Island ordnance plant will be required. Superintendent R. G. Wooldridge, who has been selected to have charge of housing and recreation, has stated to contractors and others, who inquired about this work, that the United States Steel Corporation will purchase all materials direct from the manufacturers and that no bids will be taken outside the labor. Nothing more definite, however, will be given out, Superintendent Wooldridge said, until after September 1st.

Vrydaugh & Wolfe, 347 Fifth Avenue, are expected to award the contract for plumbing work in a bank building on Fifth Avenue, within the next week, for the Exchange National Bank.

Bids for the plumbing work in a store and apartment building on Kirkpatrick Street, near Bedford Avenue, are being taken by W. Arthur Thomas, architect, Magee Building. It is to be a three-story structure, 22 by 90 feet.

Architect George H. Schwan, Peoples Bank Building, has a number of plans ready for Government housing in the Tri-State district, comprising western Pennsylvania, eastern Ohio and northern West Virginia.

Separate bids are being taken for a new motion picture theater building at Brookville, by Harry Bair, Vandergrift Building, for the Frank K. Brown Co. The approximate cost of the general work is $30,000.

Architect John H. Phillips, McKees Rocks, is taking separate bids for the plumbing and heating of a large parsonage for the St. Nicholas Greek Orthodox congregation.

Bids closed this week for the installation of plumbing in the temporary dormitory of the Western State Hospital for the Insane at Blairsville Intersection.

Weldon & Kelly have the contract for the installation of plumbing fixtures in basement and sub-basement of a church at Caldwell and Commerce Streets. The contract price is $2,170.

**Philadelphia and Vicinity.**

B. Landau, of 1216 North Fourth Street, has been awarded the contract to install a modern heating system in the new garage at Broad Street and Erie Avenue.

H. Goldner, of Fifth Street and Lehigh Avenue, is installing modern plumbing in the Philadelphia Tapestry Mills on Allegheny Avenue.

William McCoach, Jr., has secured the contract for the installation of plumbing in a new hospital at Byberry Farms.

J. A. Quinn, of 1613 Unity Street, has been awarded the contract for the installation of modern plumbing in a row of new houses in Tacony.

Chas. H. Uber, the Chester Avenue plumbing contractor, has the sympathy of his many friends on account of the death of his wife, which occurred last week.

**Erie and Vicinity.**

George W. A. Butler, of Erie, is installing the plumbing and heating in Mrs. Wm. H. Nicholson's new residence.

The Gannon & Carey Plumbing & Heating Co., of 903 Parade Street, is installing plumbing and heating systems in the million-dollar academy high school and the four hundred thousand dollar grade school in this city.

# Indiana

**Indianapolis and Vicinity.**

Construction was started this week on a two-story addition to the Fairbanks-Morse Co.'s big plant, at Northwestern Avenue and Twenty-first Street, Indianapolis, to cost approximately $75,000. The improvements at the plant will consist of a two-story brick building, containing 50,000 square feet of floor space, a boiler house, a large concrete storage pit and a tunnel under the Big Four Railroad right of way. The contract for the plumbing and heating work on the new structure has not yet been awarded.

Contracts will soon be let for the installation of plumbing and heating in the new warehouse and storage building which is to be erected at Indianapolis for the G. & J. Tire Co., at a cost of approximately $50,000.

The three colored men who a few weeks ago took a flivver belonging to Harry Callon, Jr., a member of the plumbing and heating firm of Callon Bros., at 24 South Alabama Street, Indianapois, got off with an exceptionally light sentence in the Marion criminal court this week. Each was fined $25 and costs and sentenced to serve ten days in jail.

The Vestal Plumbing Co., of 1123 Central Avenue, Indianapolis, has been awarded the contract to install a heating system in the new two-story apartment building that is to be erected at Alabama and Pratt Streets for the E. G. Spink Co. The building will contain twenty-six apartments and will cost approximately $60,000.

Freyn Bros., of 31 West Michigan Street, Indianapolis, have received the contract for the installation of a heating and ventilating system in School No. 41 at Rader and Thirtieth Streets.

The contract for the installation of a heating system in School No. 39 at State and Lexington Streets, Indianapolis, has been awarded to Hayes Bros., 236 West Vermont Street.

The contract for remodeling the plumbing and heating systems in the Benjamin Harrison school at Walnut and Delaware Streets has been awarded to Kruse & Dewenter, of 427 East Washington Street.

**Other Cities in the State.**

The Citizens' Mutual Heating Co., of Terre Haute, has filed a petition with the Indiana Public Service Commission asking for authority to charge a new rate during the coming season. The rate granted to the company a few years ago is 20 cents, but last fall, on account of the increased cost of fuel and labor, the commission added a special surcharge of 7 cents. Due to higher labor expenses the company is now asking for a surcharge of 8 cents, making a total of 28 cents per square foot of radiation up to 3,000 sq. ft.

# Kentucky

**Louisville**

F. A. Clegg & Co., of 110-112 South First Street, have just secured a $30,000 contract for work on the Government powder plant at Nashville, Tenn. This concern has also secured contracts for installing heating systems in the Associated Charities Building and in the Columbia Motor Truck Co.'s Building. The Clegg concern has just rented the next door building at 108 South First Street, thus securing a 90-foot front on that street.


## Value Received

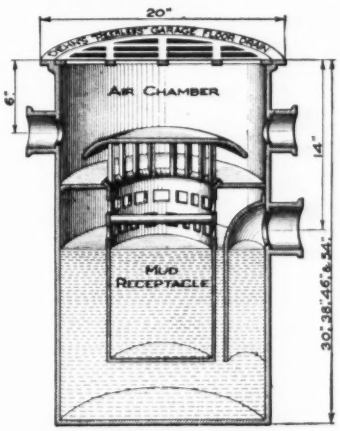


Fig. 62 Patented

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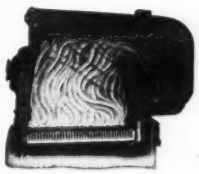
## Bernhard Boilers



In Bernhard Boilers there are only two nipples between each section and therefore the sections cannot be cramped, as when three or more nipples are used.

This also saves time when installing and almost entirely eliminates the possibility of a poor connection.

This is only one of the 20 superior Bernhard Features described in our catalogue, copy of which will be sent upon request.

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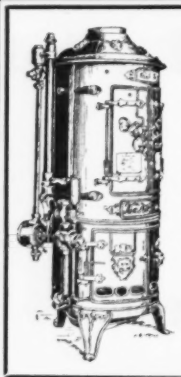

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**National Regulator Company**
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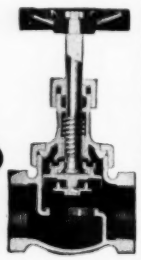
**MARSH**
UNION BONNET
DOUBLE SEAT
**VALVES**



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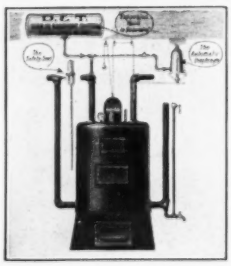
**ALL STYLES AND SIZES**

Let us send you catalogue showing line complete and quote prices on your requirements.

**MARSH VALVE CO. - - Erie, Pa.**



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costs less to install than other hot water heating systems, is cheaper to maintain and most efficient in service.

Automatically regulates dampers from 90 to 240 degrees. Rapid circulation; maintains even temperature.

**Guaranteed for Five Years.**

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**D & T Manufacturing Co.** 1911-13 Pine Street, ST. LOUIS, MO.


## RAYMORE AND COMPANY, PLUMBING AND HEATING SUPPLIES.

(Continued from Page 167.)

Then all of a sudden the plumbing supply line awoke with a shock—the young Rivertons were making good! Robert, the Fourth, or Bob, as he was called, had ideas about this stuff, which his father had sold for years, that were better than those of the doting parent. And Raymond within four years after entering the Newburgh shops had made three inventions looking to the quicker handling of the product.

By 1910 the boys, aged thirty and twenty-eight respectively, were practically in charge of the business, the father looking after the financing and taking huge enjoyment out of watching the two "lads," as they always were to him, pulling along in harness at the very head of the organization.

What the Robert Riverton Sons have done is now one of the traditions of the supply line. The fourth generation it must be remembered, and therefore by rights far along the road to decay. And all the time there wasn't a prouder man than Robert, the Third. Why shouldn't he be?

In 1916, Robert was thirty-six and Raymond thirty-four —no longer spring chickens; each had a family and their life work cut out for them. But these Riverton boys were destined to surprise all. In the Fall of 1916 both of them went to France and enlisted, one in the aviation corps, the other, Raymond, in the ambulance corps. Fortune has been kind to them, wounds they have received in plenty, especially Robert, who seems to have been a thorn to the enemy because of his daring, but still are they saved to the world, now being of course under the United States flag, the flag they saw all the time, under the flags of the Allies, civilization knowing no national lines, recognizing no difference between men who are fighting its battles.

And Robert, the Third, what of him? Well, he's back in the harness doing the work the boys have been handling for eight years past, longer than that, in fact, and doing it with a smiling face and with a renewed strength. That's what the War has done to Robert Riverton, the Third. A smiling face, but God only knows the aches in that heart, the haunting fear, the cruel disappointment over the vision of two sons carrying on the business, lifting the name and ideals of Robert Riverton Sons even higher than they had been—of seeing that vision go down behind the eastern seas.

### III.

"And so," said Nathaniel Raymore, "I salute Robert Riverton over there on West Street, as being among the happiest of men. He is carrying out there on the Western Front ideals which he must have had as a boy and a young man. Possibly Riverton doesn't know that he is happy. I would then to Heaven that he could exchange places with me for a few hours, that he might feel that sense of personal futility that hangs over me like a nightmare, that he might hear as I do during the long, white nights the call of my country, of a bleeding civilization and be impotent to answer it—I wish he might feel what I feel, then he would go back to that office of his and count himself among the happiest of men."

The two men sat silent for a few moments; on the face of the Boss sat a tear that Harton thought was one of the most beautiful he ever had seen, then Mr. Raymore spoke again:

"The good old world gone, that of easy days, of happy

nights, of each morning and evening an invitation to more joy. But the better world, the cleaner world, the more efficient world, the world in which men no longer are limited by horizons, the world of greater endeavor, of heroic achievement—that is here, and I thank God I have lived to see its dawning! 'I saw the morning break!'"

## HEATING AND VENTILATING SMALL AUDIENCE HALLS.

(Continued from Page 159.)

tem, as it multiplies the number of stacks and adds to both the steam piping and sheet iron work in the way of casings and large flues.

When a fan is used, the entire radiating surface may be placed in a single heater and the air carried to the various supply registers at a comparatively high velocity, thus greatly reducing the size of ducts and flues and also making it possible to use a lighter weight of iron.

In halls of good height, and not too closely packed, it will not be necessary to use a vent fan, as the slight pressure or plenum effect of the supply fan will be sufficient to effectively force out the exhausted air through flues provided for this purpose, supplemented by leakage around doors and windows.

In halls of the character under consideration the air is best admitted through a number of well distributed wall openings about 8 feet from the floor, and the foul air removed through a few number of vents placed close to or

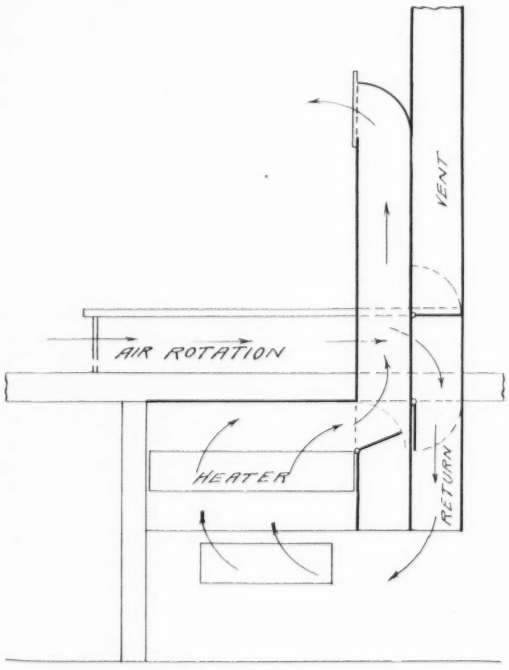
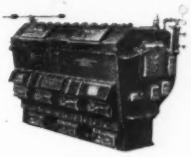



Fig. 5.

in the floor. The total area of the vent flues should be from 30 to 50 per cent greater than the total of the supply flues when the latter are designed for a velocity of 600 to 700 feet per minute. When possible, ceiling vents should be provided in halls of this type, for use when especially crowded or when the room becomes overheated. These should be controlled by a separate damper and used only when conditions especially call for it. Ordinarily

ECONOMY  EFFICIENCY

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**Saves** Fuel Labor
*Manufactured only by*
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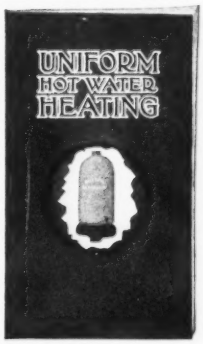


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**Ball Seal Generator**
for Hot Water Heating.
This generator increases circulation and radiation. Prevents sluggish, water-logged conditions. Reduces fuel cost. Operates without noise. No attention needed.
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***Government (Cantonment Type) TULIP PATTERN 4 inch Cast Brass Shower Head with Removable Face Tapped half inch Iron Pipe Female.***

***Rough Brass or Polished and N. P.***

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**Simple Sanitary Satisfactory**
Designed for general use, and especially where hard usage is unavoidable. Lever or push button action.
Write for our Special Sample Valve Offer.
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**No. 2A Thermostat**
MFG. CO. ROBERTSHAW YOUNGWOOD PA
The standard for 30-40 gal. boilers, and single coil heaters or equivalent. Has ⅜-in. gas openings.
We Make All Sizes

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It is your patriotic duty to install them. They are light, compact, quick-heating and save space. Can be hung on wall.
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**"FEMCO" Specialties**
A standard line of Plumbers' Brass Supplies with an established reputation for
Quality Service Originality
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Frost Manufacturing Co. Kenosha, Wis.

the use of ceiling vents will carry off too much heat and thus interfere with the proper warming of the hall.

**Small Theatres.**

These are intended to include moving picture halls and similar rooms, which frequently have no outside exposure and are liable to be closely packed. Rooms of this kind require fresh air to be supplied with a fan to get the best results, and furthermore, it should be well distributed. Probably the best arrangement is to provide a space beneath the floor, from 1 to 2 feet in depth, into which the fan discharges, and admit the supply to the room above through mushroom ventilators, one placed beneath each seat. This produces an upward current of fresh air throughout the room without drafts and carries away the foul air as fast as it is formed. This method of supply requires the removal of air either through or near the ceiling, as it is necessary to keep it constantly moving upward away from the breathing line.

The waste of heat in this case will not be excessive because the air is admitted at a much lower temperature.

The problem in rooms of this kind is usually that of keeping them cool rather than one of heating after the temperature has once been raised to the normal degree. The animal heat given off from the bodies of the occupants, and that from the lights, especially if gas is used, will go a long way toward heating the room. Experience has shown that the air supply admitted at 60 to 65 degrees is often sufficient to keep such rooms warm when fully occupied, even in average winter weather. In general, the temperature of the entering air must not fall much below 65 degrees, else it will produce discomfort around the feet, if mushroom ventilators are used, and cold drafts of the air is admitted through the wall registers. Overheating in galleries must be prevented by providing ceiling vents at the extreme rear, connected with a fan, if necessary.

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**Late News from Chattanooga, Tenn.**

Hunt Bros. have been awarded the plumbing contracts on four residences and a four-apartment building to be erected in this city.

The Fred Cantrill Co. has been awarded the contract for the installation of plumbing and heating in the new State Life Insurance Building; also the plumbing contracts on the Farragut Hotel and the General Hospital at Knoxville; three school houses at Murfreesboro; the postoffice at Shelby, N. C., and at the Fort Oglethorpe cantonment.

Gus A. Wood, Jr., son of G. A. Wood, of 813 Cherry Street, one of the busy plumbing and heating contractors of Chattanooga, is now in the service of the nation, being stationed at Camp Sevier, S. C.

Walter T. Wood, of 15 Market Stret, has recently installed plumbing systems in the building of the Thatcher Spinning Co., in several other manufacturing plants and in the residence of Z. N. Wheeler.

The Chattanooga Heating Co., of 815 Cherry Street, will install the heating system in the residences of Sam Erwin, Z. N. Wheeler and in the First Presbyterian Church.

George T. Strahle, Jr., of the Chattanooga Heating Co., is now stationed at Camp Jackson, Columbus, S. C.

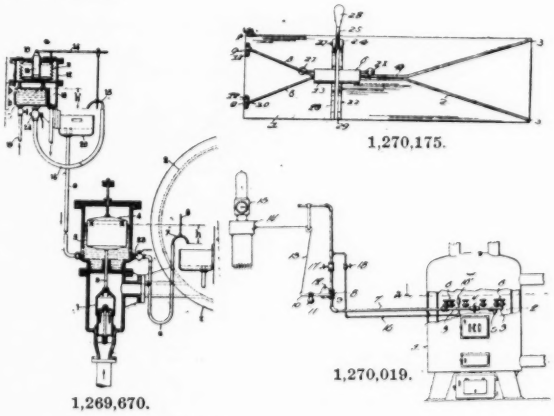
The Kelly-Harris Plumbing Co. has recently installed the plumbing and heating systems in a building of nine apartments on East Fifth Street; also the plumbing and heating systems in the Southern Machinery plant on Missionary Avenue, the McCabe Punch & Shear Co.'s new building and the Hamilton National Bank Annex.

# Patents

**Heating Department.**

1,269,670. Hot-Water-Heating Installation. Wilhelm Zublin, Wintherthur, Switzerland. In a hot water heating installation, an apparatus for regulating the flow of circulating water, comprising a controlling valve for the flow of water, a movable float connected therewith, a float chamber containing the float and furnished with a liquid supply, flexible pipes, one being arranged to supply said float chamber, the other serving for the outflow of liquid therefrom, so as to determine a regulable flow of liquid through the same and automatic adjusting devices connected with said flexible pipes and arranged to raise or lower them in dependence of variable magnitudes in order to correctly harmonize the liquid flow through said float chamber according to variations of said magnitudes, substantially as and for the purpose described.

1,270,175. Pipe-Cutter. John B. Lambe, Graettinger, Iowa. A device of the character described including a supporting base plate, a rigidly mounted pipe receiving sleeve on the base plate, a movably mounted pipe receiving sleeve on the base plate arranged in alinement and in spaced relation with the first sleeve, cutting means, and common means mounted on the base plate and positioned beneath the pipe section receiving sleeve so as to support the latter in spaced relation to the plate and being also designed to pivotally support the cutting means in guiding movement thereof when swung downwardly so as to pass between the sleeves.



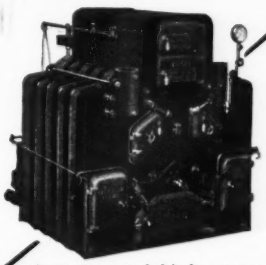
1,270,175.

1,270,019.

1,269,670.

1,270,019. Gas Burner Attachment for Hot-Air or Hot-Water Furnaces. Rudolph J. Daase, Milwaukee, Wis. A gas burner comprising a coil made up of a plurality of pipe sections to permit its insertion in disassembled form through the fuel supply door of a furnace, unions for connecting the pipe sections. and a single supply pipe and burners carried by the coil.

1,269,907. Gas-Radiator. Elnathan Cole, Los Angeles, Cal., assignor to Cole Manufacturing Company, a Corporation of California. A gas radiator comprising an outer shell open at the bottom and having an outlet at the top, a heating box within said outer shell spaced apart therefrom, a flue outlet in the rear wall of said heating box extending through the rear wall of the outer shell, a deflec-

**The Newport**

*The Magazine Feed Boiler with the Adjustable Throat*

**The Patriotic Boiler**

This year home owners will be forced to take various sizes and kinds of fuel—pea and buckwheat along with chestnut, range and egg. Also non-caking nut soft coal. The Newport is the only boiler which burns efficiently all these sizes and kinds—separately or mixed. Thus your customers are safe, for unusual fuel conditions are overcome. Send for "Newport Heating" document.

**Newport Boiler Company**
107 South Dearborn Street Chicago

**The Boston Grease Trap**

is pronounced the most efficient trap on the market, wherever it is in use.
Separates all grease from waste water and retains it so that pipes will not become clogged.
Special clean-out feature. Handhole is extra large, making it easy to remove grease.
Price within reach of all.
Write for details.

**R. Estabrook's Sons**
1st and C Sts., South Boston, Mass.

ELECTRIC HOUSE PUMPS — Dayton — WATER SUPPLY SYSTEMS

**Suction Pumps *and* Complete Water Supply Systems**

pumping capacities 120 to 1,000 gallons per hour. Efficient Deep Well Pumps with Hyatt Roller Bearings and silent chain drive, pumping capacities 150 to 2,000 gallons per hour. **Write for bulletins and price sheets.**

**The Dayton Pump & Manufacturing Co.**
DAYTON, OHIO New York, N. Y., 30 E. 42d St.

**PORTABLE SHOWERS**
*SPECIAL PRICES IN DOZEN LOTS*
**SHOWERS OF ALL DESCRIPTIONS**
**GOETZ BRASS COMPANY**
630 N. FRANKLIN ST. CHICAGO, ILLINOIS

¶ If you want a salesman, foreman or workman, advertise in the Classified Department of "*Domestic Engineering.*" Used by the best houses in the trade.

**DESOLVO Clears Clogged Pipes**
The Original and Only pipe cleaner that can be used successfully with Cold water.
Used by progressive plumbers everywhere.
Order from your jobber.
**The Chamberlain Company**
*Manufacturing Chemists* Pittsburgh, Pa.
K-K Cleans closet bowls "the sanitary way."

**No More Back Water**

where the SIGNET Drain is used.

Keeps basement dry, clean and sanitary. A positive safeguard, either wet or dry, against sewer gas and water.

Brass working parts submerged—works automatically by gravity.

Always works. Always satisfactory.

Write for literature.

**CRAMPTON-FARLEY BRASS CO.**
KANSAS CITY, MO.

**Milwaukee**

*Cast Brass*

**Shower Heads**

*With Removable Face*

Made with or without Ball Joint in the following sizes:

**3 in., 4 in., 4½ in., 5 in., 6 in., 6½ in. and 8 in.**

*As good as it is possible to make a shower head.*

D200

Order From Your Jobber. Specify the Milwaukee. Made by

**Milwaukee Flush Valve Co., Milwaukee, Wis.**

**Wolverine**

**Nut and Screw Repairs**

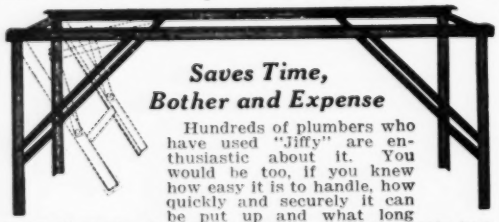
**Will Help You in**

***"Building Bigger Business"***

**WOLVERINE BRASS WORKS**

San Francisco, Cal. Grand Rapids, Mich.

**The "JIFFY" Collapsible Laundry Tray Frame**

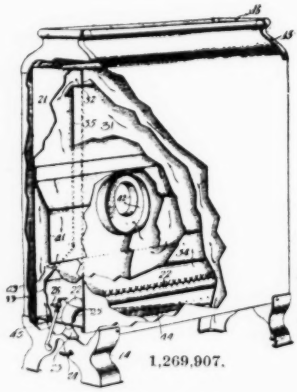


***Saves Time, Bother and Expense***

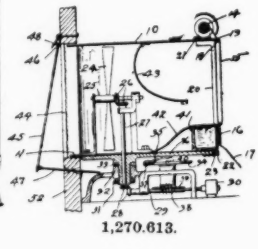
Hundreds of plumbers who have used "Jiffy" are enthusiastic about it. You would be too, if you knew how easy it is to handle, how quickly and securely it can be put up and what long years of service it will give. Made of heavy angle iron. Braces of heavy steel, coated with durable black paint. It's a money maker for you. Go see the "Jiffy" at your jobber.

**THE FORD DONLEY CO., 1940 East 117th St., Cleveland, Ohio**


tor plate secured to the rear wall of the heating box and extending inwardly and downwardly beyond the flue outlet, a partition in said heating box extending from the bottom of the box to a point near the top of the same and forming a passage between the upper end of the partition and the top of the heating box, said partition having a vertical portion below the outlet, an inclined portion below and adjacent to the lower edge of said deflector plate and a vertical portion above the inclined portion, and a burner in said heating box under the inclined portion of the partition, said heating box having openings in the bottom thereof on each side of the partition.

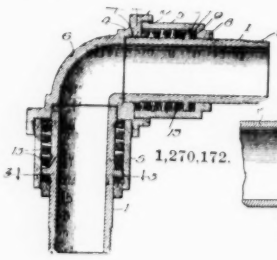


1,269,907.

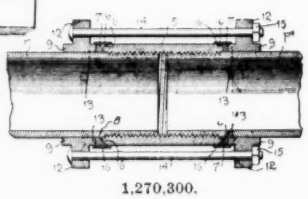


1,270,613.

1,270,613. Ventilator and Air Purifying Apparatus. Frank A. Gustavson, Seekonk, Mass. An air purifying and ventilating apparatus comprising a casing, means in said casing for carrying a deodorizing agent, means for drawing air into said casing from a plurality of different sources at successive intervals of time, forcing the air into contact with the deodorizing agent and out of the casing.



1,270,172.

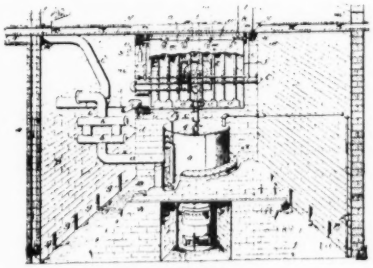


1,270,300.

1,270,172. Packless Swing Joint. Jacob B. Knudsen, Chicago, Ill. A swing joint for pipes comprising a hollow coupling having an enlarged bore at its end, a pipe section having its end fitting within said enlarged bore, with its inner surface flush with the inner surface of the coupling, the enlarged bore forming a bearing for the inner end of the pipe section, an annular squared flange on said pipe section spaced from the end thereof, a hollow swivel member of greater diameter than the pipe section fitting over said pipe section and flange and having one end drawn in to intimately surround the pipe section, a squared shoulder formed on said drawn-in portion, the opposite faces of said pipe section, flange and squared shoulder having concentric grooves formed therein, a ring of softer metal interposed between said faces; an annular flange on the coupling member forming a shoulder and having a threaded, integrally formed collar thereon engaging the threaded portion of the swivel member, and a spring surrounding said pipe section, surrounded by said swivel member and interposed between the shoulder on the coupling

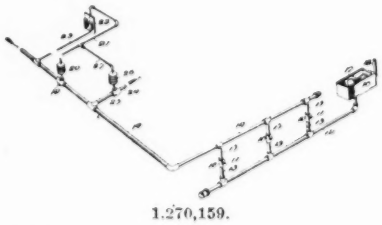
member and the squared flange on the pipe section to force one of the faces of said pipe section flange toward the squared shoulder on the swivel member, the contracted end of said swivel member forming an additional bearing for the pipe section beyond the annular flange thereon.

1,270,300. Pipe-Coupling. Edward King and Frank Welsh, Granville, Ohio. The herein described pipe coupling including a sleeve adapted to be connected to the ends of the pipe sections, compressible gaskets for engagement against the ends of sleeve and of a normal diameter corresponding to the diameter of the sleeve, collars engaged upon the respective pipe sections each having an annular shoulder on one of its side faces to engage one of the gaskets, adjustable means connecting the collars to cause the same to exert an axial compressing pressure against the respective gaskets, and a contractile metal band engaged upon each gasket and overlapping upon the end of the sleeve and upon the shoulder of the adjacent collar.



1,270,027

1,270,027. Combined Steam and Hot-Air Heating System for Buildings. Charles R. Hansen, Cedar Rapids, Iowa. A combined steam and hot air heating system for buildings comprising a hot air room provided with a hollow side wall having a series of inlets at its bottom for the admission of partially heated fresh air into the room, a steam boiler furnace within the room, a smoke flue heater connected to the furnace and suspended between said furnace and wall, a steam coil heater connected to said furnace and suspended from the ceiling of the room, a casing suspended from the ceiling of the room, a plurality of steam heated radiator sections carried within the casing and connected to the furnace, an air moistener suspended within the casing and surrounding said radiator sections, an air purifying and disinfecting tank connected with the outside of the furnace and provided with a series of outlet openings at its upper end portion, a main hot air distributing pipe connected with the casing at one end of said casing, and a fan connected to the rear portion of the casing for forcing the heated air to the various rooms of the building.



1,270,159.

1,270,159. Automatic Control for Humidifying Apparatus. William B. Hodge, Charlotte, N. C., assignor to Stuart W. Cramer, Charlotte, N. C. A humidifying system comprising sources of air pressure and liquid to be sprayed and one


**Running Water For Farm Homes**

Here is an immense field which no plumber or hardware man should overlook. Don't let this profitable business go out of town. Go after it yourself with the

**MILWAUKEE WATER SYSTEM**

Hundreds of Milwaukee Systems are now in use and giving perfect satisfaction on farms, in country homes, in schools and institutions. Scores of prospects still unsold in every locality—in YOURS.

Different from all other systems; forces water direct from well to the faucet—no flat, stale, stored water. Easy to install; requires no attention, carries a profit no dealer can afford to overlook.

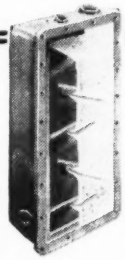
Post card brings full information.

**MILWAUKEE AIR POWER PUMP CO.**
832 Third Street MILWAUKEE, WIS.

**UNITED** LEAD TIN BRASS **LINED PIPE**

Longest-lived, most economical pipe made. Also "United" acid-proof pipe and fittings.

**UNITED LINED TUBE & VALVE CO.**
186 Franklin Street BOSTON, MASS.



**Only Water Heater with a "Cleanout" Feature**

In hard water districts coil heaters are hard to sell because they clog with lime and become useless.

**SHARP'S CLEANOUT WATER HEATER**

is designed for just that kind of service. No coils or small passages. Is easily and thoroughly cleanable. Will give a lifetime of service. No excessive fuel costs. Replacing troublesome coil heaters with Sharp's will be profitable business for you.

Get in touch at once and ask for detailed information and prices.

**GENERAL MANUFACTURING CO.** Heater Dept.
67 19th Street, WHEELING, W. VA.

**PATENTS**

Over twenty years' experience in handling patent litigation, rendering opinions as to infringement and validity, and the preparation and prosecution of application for patents. References: Joseph A. Vogel Co., Wilmington, Del.; District National Bank, Washington, D. C.; Martindale's American Law Directory; Dun or Bradstreet. Correspondence invited.

**TALBERT & TALBERT, Patent Lawyers**
5708 TALBERT BLDG. - WASHINGTON, D. C.

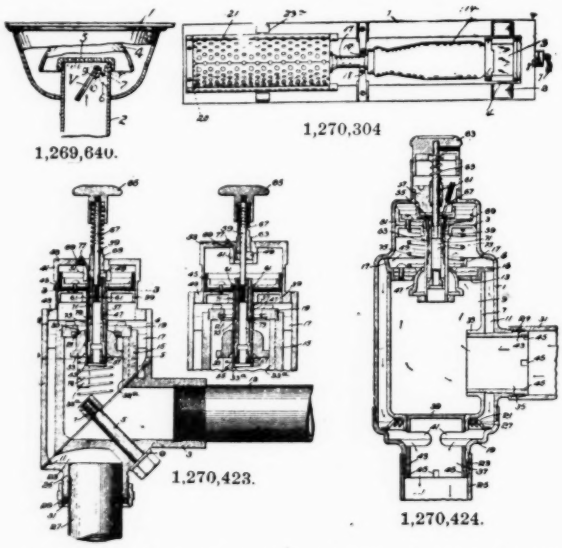
or more spray heads each connected on both said sources and each having an air orifice in aspirating relation to a liquid orifice, a pneumatically-operated shut-off valve in the air-line leading to said heads and an automatic humidity regulator controlling the operation of said valve and simultaneously and inversely controlling a vent in the section shut off thereby.

**Plumbing Department.**

1,269,640. Sewer-Trap. Albert Peter, St. Louis, Mo. A sewer trap valve comprising a disk, a pair of triangular ears disposed adjacent the edge thereof, a hinge pin connecting the free vertices of the ears, a web spaced from the hinge and connecting the webs at points adjacent the valve body, a waste pipe, and a member in said pipe provided with an open recess for receiving the hinge pin of the valve, the inner wall of the recess operating as a finger and positioned relatively to the adjacent edge of the web aforesaid for engaging said edge and thereby arresting the valve in its downward swing and maintaining it at an incline to the axis of the waste pipe.

1,270,304. Soldering-Iron Stand. Frank Kuhn and Jay A. Hand, Detroit, Mich., assignors to American Electrical Heater Company, Detroit, Mich., a Corporation of Michigan. A soldering-iron stand comprising a base, means carried by said base for supporting a soldering-iron, and a guard upon said base for the heated portion of the iron, said guard being movable relative to said base to facilitate engagement of the iron therewith and its disengagement therefrom.

1,270,423. Valve for Water-Closets and Other Uses. Elbert E. Lochridge, Springfield, Mass. A valve mechanism comprising a fitting divided into sections, one of said sections having chambers therein, and also having a main valve for controlling the communication between said chambers, the other section having an inlet member communicating with one of said chambers and an outlet member communicating with the other chamber, and means adjustably connecting said sections having provision

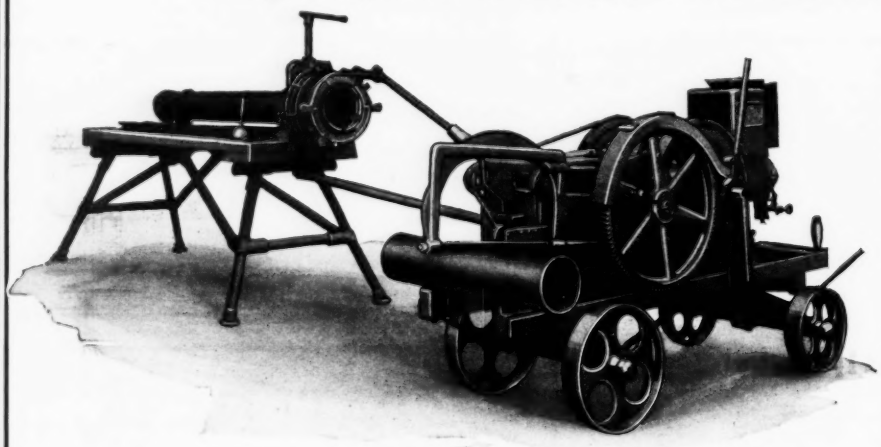


1,269,640. 1,270,304 1,270,423. 1,270,424.

permitting said members to exchange places with one another without loss of communication with their respective chambers.

1,270,424. Valve. Albert E. Lochridge, Springfield, Mass. The combination with a casing of wall therein dividing


## Does the Work of Two to Four Men



This is an important item in these days when labor is scarce and wages high.

**COLUMBUS**
**Portable Pipe Machine**
(Patents Pending)

is taken right on the job, and cuts and threads pipe just as measurements are taken and pipe installed.

**Emery wheel for grinding tools**

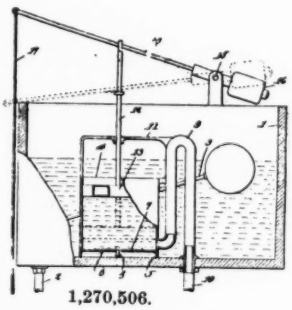
It is compact, self-contained, passes easily through a 2′8″ door, can be taken to any floor of a modern high building.

Attaches to any geared die-stock. The folding bench folds to a width of 10 inches for transportation.

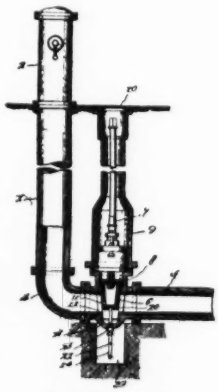
For catalogue and price, see your jobber or write

**COLUMBUS MACHINE WORKS** COLUMBUS INDIANA

the same into inner and outer chambers, and inlet and outlet tubes crossing said outer chamber and tapped to said wall, one of said tubes having communication with said inner chamber and no communication with said outer chamber, and the other of said tubes having communication with said outer chamber and no communication with said inner chamber, said tubes being interchangeable according to the desired direction of delivery of fluid from said casing.



1,270,506.



1,270,677

1,270,506. Flush-Valve. Cephas V. Fite, Charlotte, N. C., assignor of one-half to Walter W. Watt, Charlotte, N. C. The combination with a tank having an inlet, of a cylinder within the tank and formed with an open upper end located below the water level of the tank, said cylinder provided with a valved inlet, a siphon having its short arm connected to the lower portion of the cylinder and its long arm constituting an outlet from the tank, a combined float and piston mounted in the cylinder, and operating means connected thereto.

1,270,677. Antifreezing Hydrant. Michel S. Yassukovitch, New York, N. Y. The combination with an underground water service pipe, a stock for delivering water to the surface, and a connection between said water service pipe and stock, of a hollow valve for controlling the passage of water to said connection and stock, said valve having an opening through which the water in said stock and connection may pass to the hollow interior thereof, and a drain pipe detachably suspended from and movable with said hollow valve, substantially as described.

---

Clarence P. Day, of Los Angeles, is constructing a fountain, running streams, pools, pumping plant and a pool drainage system for L. C. Riggs, Flintridge, Cal., at a cost of $2,400.

---

In their advance to the Marne the German armies were followed by a corps of what might be described as professional burglars—men armed with jimmies, crowbars and housebreaking and looting tools of every description. All the French correspondents at the front are agreed in their accounts of systematic robbery carried on by the invader. "These genteel burglars," to quote a French correspondent, "systematically rob right and left as soon as their men have trampled over the country in front of them. Indeed, it seems the Kaiser's fighters have been urged forward recently by promises that all loot would be equally divided."


# All Parts above Water

PENBERTHY

There is no chance for the Penberthy Drainer to rust out, clog or corrode, because all the working parts are high and dry above the water line.

**Building Bigger Business** is the watchword of the hour. Think over the basements and cellars you know of that are not protected by drainers and sell them the

PENBERTHY TRADE MARK

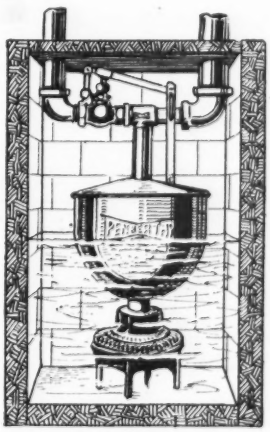
**Automatic Cellar Drainer**

You will be surprised how much profitable business you can secure with very little effort.

The Penberthy is easy to install. Only small sump required. Operates automatically by steam or water and costs practically nothing to maintain. Entirely noiseless.

***Order from your jobber***

**Penberthy Injector Company, Detroit, Mich.**
(Established 1886)
**New York Depot: 71 Beekman Street Canadian Factory: Windsor, Ont.**



All parts, except strainer, made of brass.
Requires very little space and no attention whatever.
Made in five sizes.

# Classified Advertisements

**The charge for advertisements under this heading is $1.00 for 25 words or less, including heading and address; 4 cents each for additional words. To insure insertion, copy and remittance should reach us by Wednesday morning.**

## Situations Open

WANTED—FIRST CLASS PLUMBER, one preferred with some experience on heating and residence water supply systems. Address Fred J. Douglass, Birmingham, Mich. 8-3; 10; 17

## For Sale.

FOR SALE—ONE HOT WATER BOILER, W-36-6 (Ideal) in good condition. Janssen Seed and Floral Co., Springfield, Ills. 8-3; 10

FOR SALE — SECTIONAL STEAM heating boiler; U. S. Radiator Corporation's 8 section, 36 inch, 3,250 ft. rating, practically new. Also about 2,000 ft. used radiation; radiator valves; used 5 inch piping; new 3 inch galvanized piping. M. W. Townsend, Martinsville, O. 7-27; 8-3

## Miscellaneous.

WANTED—HIGH PRESSURE STEAM boiler, 6 ft. 6 in. diameter and 18 ft. long. Carl Frank Co., Schenectady, New York. 8-3

WANTED—ONE FRONT AND BACK section, also one middle section for an old style Ideal Sectional Boiler No. 069. Address Bernard Gause, Jacksonville, Ill., with price. 8-3; 10

SALESMAN CALLING ON PLUMBING trade in Philadelphia, desires to handle a specialty as side line on strictly commission basis. Address 2549, care "Domestic Engineering," Chicago. 8-3

WE BUY AND SELL USED BOILERS and radiators. D. B. Plbg. & Htg. Sales Co., Fort Wayne, Ind. 8-3; 24

**WE BUY IRON PIPE COUPLINGS—spot cash. How many, either pounds or pieces have you of various sizes? Gwilliam Supply Co., 615 Christian Street, Philadelphia, Pa.** 10-6,tf

**1½ x ¾ RED. ELLS**

**BIN LABELS**
For water, gas and steam. Over 5,000 different kinds. Send for samples and prices. **Wesley A. Fink, Haddon Heights, N. J.**

SELL YOUR SURPLUS COUPLINGS and fittings. Write us. The A. & J. Mfg. Co., 557 W. Lake St., Chicago. tf

## Government Proposals

Treasury Department, Supervising Architect's Office, Washington, D. C., July 19, 1918.—Sealed proposals will be opened in this office at 3 p. m. August 12, 1918, for a new boiler, etc., in the United States Post Office at St. Cloud, Minn., in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Custodian at St. Cloud, Minn., in the discretion of the Supervising Architect, Jas. A. Wetmore, Acting Supervising Architect. 7-27; 8-3

Treasury Department, Supervising Architect's Office, Washington, D. C., July 15, 1918.—Sealed proposals will be opened in this office at 3 p. m. August 12, 1918, for a woman's New Toilet Room, etc., in the United States Public Building, Cheyenne, Wyoming, in accordance with the specification and drawing, copies of which may be had at this office or at the office of the Custodian, Cheyenne, Wyoming, in the discretion of the Supervising Architect, Jas. A. Wetmore, Acting Supervising Architect. 7-27; 8-3

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., July 5, 1918. Sealed proposals will be opened in this office at 3 p. m., August 7, 1918, for a new boiler, etc., in the United States post office at Blair, Neb., in accordance with drawings and specifications, copies of which may be had at this office or at the office of the custodian, Blair, Neb., in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 8-3

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., July 25, 1918.—Sealed proposals will be opened in this office at 3 p. m. August 15, 1918, for changes and repairs to plumbing, heating, etc., in the U. S. Court House and Post Office at Winona, Minn., in accordance with the drawings and specifications, copies of which may be had at this office or at the office of the Custodian at Winona, Minn., in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 8-3; 10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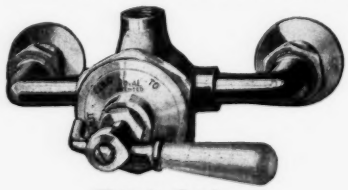

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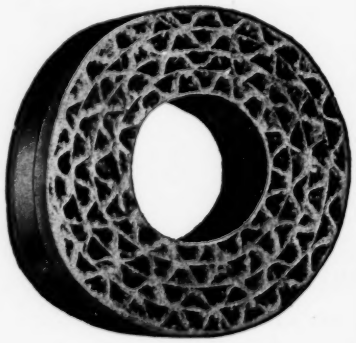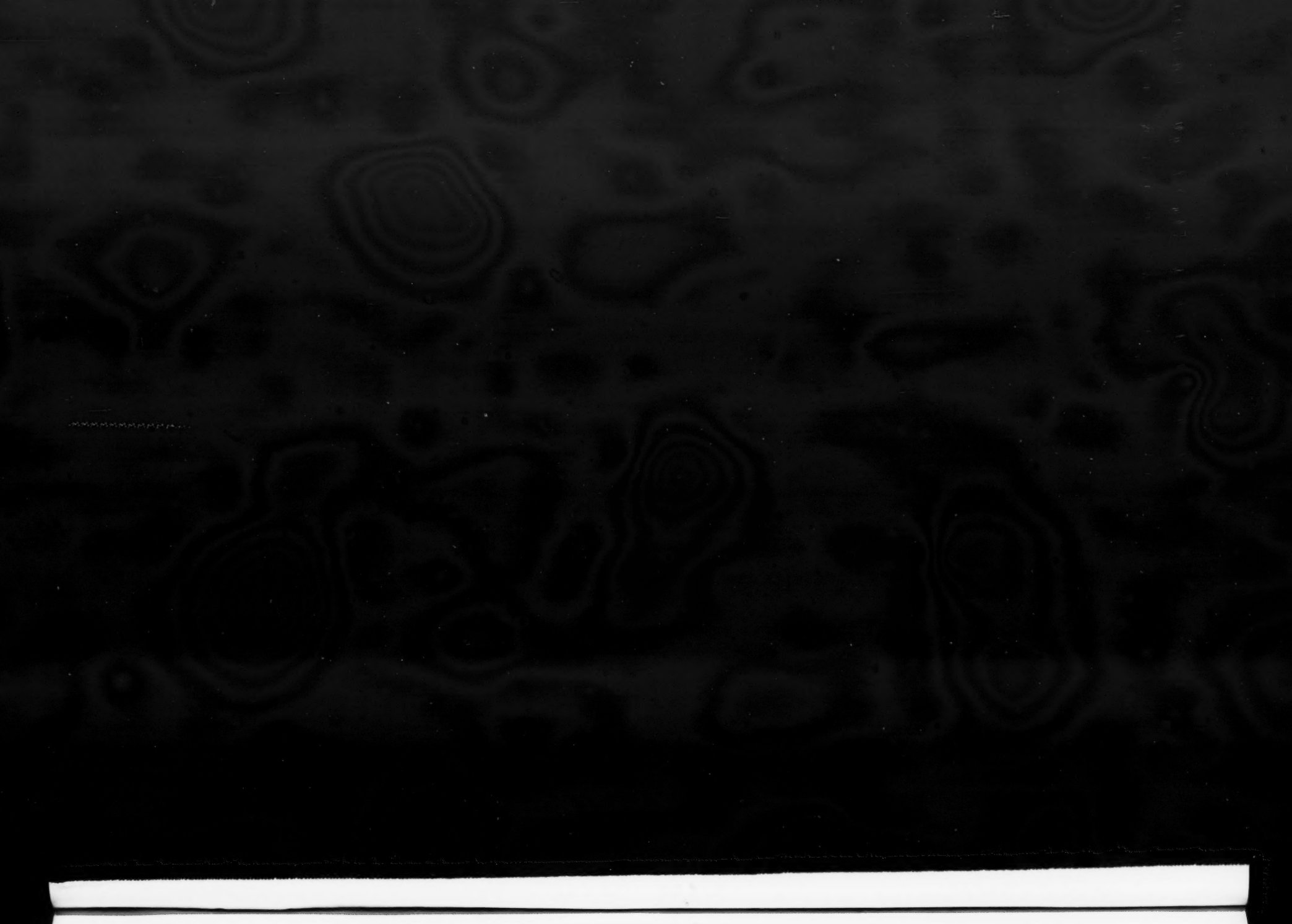
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